THRILLING WONDER STORIES

15¢ DEC.

BRAIN STEALERS OF MARS
A Novelette of Interplanetary Menace
By JOHN W. CAMPBELL, Jr.

BRINK OF INFINITY
By STANLEY G. WEINBAUM

THE LANSON SCREEN
A Novelette of Mad Catastrophe
By ARTHUR LEO ZAGAT

MUTINY ON EUROPA
A Novelette of the Prison Asteroid
By EDMOND HAMILTON

A THRILLING PUBLICATION

STRANGER THAN TRUTH

A BAD CASE OF PIMPLES MADE NAT HATE TO GO PLACES-

A NICE CLUBBY GUY YOU ARE. WHAT'S THE IDEA – KEEPING YOURSELF ALL TO YOURSELF THIS WAY? FRAN'S PRETTY PEEVED AT YOU FOR TURNING DOWN HER INVITE
AW QUIT YELPING, STEVE – I'D GO FAST ENOUGH IF ONLY I DIDN'T HAVE THIS FACE FULL OF HICKIES – BUT GOSH I LOOK SO AWFUL-I-

SAY, FRAN – I'VE FOUND OUT WHY NAT'S ACTING SO QUEER AN' STICKS HOME SO MUCH – SEEMS HE'S ALL WORKED UP OVER THOSE HICKIES HE'S GOT
POOR KID – HE OUGHT TO EAT FLEISCHMANN'S YEAST – IT'S SIMPLY MARVELOUS HOW IT GETS RID OF PIMPLES – STEVE, WHY DON'T YOU TELL HIM ABOUT IT?

OH, ISN'T NAT IN, MRS. JONES? THEN WILL YOU GIVE HIM THESE? TELL HIM I'VE HEARD THIS YEAST JUST WRECKS PIMPLES – AN' THAT'S A FACT...
THANK YOU, STEVE – I'LL TELL NAT ALL YOU SAID AND I'LL MAKE SURE HE EATS THESE YEAST CAKES REGULARLY

PRETTY GOOD, ISN'T IT, WHAT YOU AN' ME AN' FLEISCHMANN'S YEAST DID FOR OLD NAT – HE'S ACTIN' LIKE A REGULAR GUY AGAIN SINCE THOSE PIMPLES DID A FADEOUT

-clears the skin

by clearing skin irritants out of the blood

Don't let Adolescent Pimples make YOU miss out on Good Times

NEARLY all boys and girls are subject to pimples after the start of adolescence—from about 13 to 25, or even longer.

During these years important glands develop and final growth takes place. Disturbances occur throughout the body. The skin gets oversensitive. Waste poisons in the blood irritate this sensitive skin. Pimples appear!

Fleischmann's fresh Yeast helps to give you back a good complexion by clearing these skin irritants out of the blood. Then—the pimples go! Eat 3 cakes daily—one cake about ½ hour before meals—plain, or in a little water—until your skin clears.

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Choose Now!

ANY OF THESE GREAT

Genuine Jewelry Values

SEND ONLY $1.00 NOW

not over 10¢ A DAY

10 MONTHS to PAY

HERE they are! The "people's choice" by an overwhelming majority. The MOST POPULAR JEWELRY ITEMS — offered by Royal — **America's Largest Mail Order Credit Jewelers** — at money-saving lowest spot cash prices — and on ROYAL'S EASY TERMS. ELECT YOUR CHOICE NOW! You're sure to win lasting joy and happiness in owning a fine, genuine Blue-White Diamond or a Nationally Famous Wristwatch. Cast your vote for greater jewelry values by sending your order AT ONCE!

10 DAYS FREE TRIAL — You're appointed sole judge! If you're fully satisfied, after 10 DAY TRIAL period pay only the small amount stated each month. If you decide you can surpass these values anywhere just return your selection and we will immediately refund your entire deposit. That's our "Square Deal" platform.

$1.00 is all you need now! — 10 MONTHS TO PAY — It's easy to open an account with Royal. All you need is a good character and a steady wage or income. Send only $1.00 to show good faith and a few personal facts such as age, occupation, etc. **No security — no red tape — no interest. No direct inquiries.** We ship promptly PREPAID. NO C.O.D. to pay on arrival.

SATISFACTION GUARANTEED — Every item is sold with ROYAL'S written gold bond guarantee Backed by 40 years of nationally known fair and square dealing. **Elect Your Choice at Once!**

Both $29.75

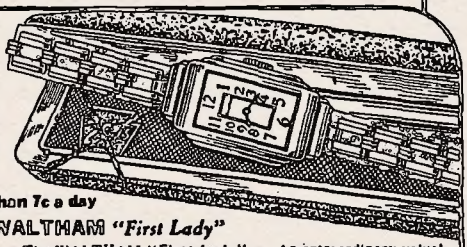
$2.88 a month

4 Diamonds

LF-1 . . . "Queen of Hearts" — Perfectly matched engagement and wedding ring ensemble of 14K Solid White or Yellow Gold. The engagement ring is set with a fiery, genuine blue-white diamond of maximum size — the wedding ring with 3 matched diamonds. Specify gold desired. **Both for only $29.75. Only $2.88 a month — less than 10c a day**

Sale

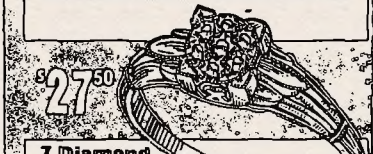
WALTHAM WATCHES



Only $19.75 Less than 7c a day

The WALTHAM *"First Lady"*

LF-4 . . . The WALTHAM "First Lady". — An extraordinary value! Lovely baguette type, rectangular, white chromium finished case. Factory guaranteed, dependable WALTHAM movement. Link bracelet to match. Designed to sell at $29.75. Now only $19.75. **Only $1.88 a month — less than 7c a day.**



$27.50

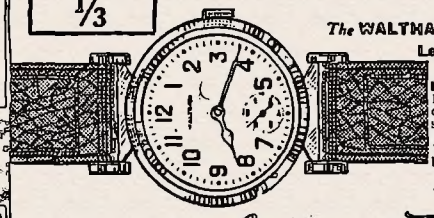
7 Diamond Square Cluster

You Save $12.25

LF-2 . . . A dazzling, new, lady's cluster, expertly set with seven finely matched, brilliant, genuine blue-white diamonds. Looks like a $450.00 square prong solitaire! Hand engraved 14K Solid Yellow Gold ring. A big "flash" and a $39.75 value! Very specially priced now at only $27.50. **Only $2.65 a month — less than 9c a day.**

SAVE UP TO 1/3

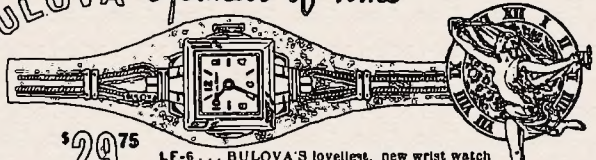
The WALTHAM "CANDIDATE"



Less than 6c a day **Only $18.75**

LF-5 . . . A great WALTHAM value! Round case in the charm and color of natural gold with new special stainless steel; rust-resistant back. Factory guaranteed 9-Jewel WALTHAM Movement. Genuine lesther strap. Made to sell at $27.50. Now Only $18.75. **Only $1.78 a month — less than 6c a day.**

BULOVA *Goddess of Time*

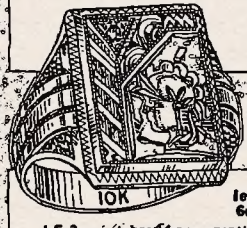


$29.75

$2.88 a mo.

LF-6 . . . BULOVA'S loveliest, new wrist watch inspiration, glorifying the "Goddess of Time" — and American Womanhood. 17 Jewel BULOVA movement; fitted in new, square mold tiny case in the charm and color of Natural Gold. Silk grosgrain ribbon bracelet. $29.75 **Only $2.88 a month — less than 10c a day.**

LF-7 . . . "Goddess of Time" in engraved Natural Gold matched link bracelet. $33.75 — **only $3.27 a month.**



Only $16.50

less than 6c a day

LF-3 . . . A bra&d new, gent's ring of richly engraved 10K solid yellow gold; set with fiery, genuine diamond and a Cabuchon style, intaglio engraved Hematite. Very good looking! **Only $1.55 a month—less than 6c a day.**

AMERICA'S LARGEST MAIL ORDER CREDIT JEWELERS

136 Years FREE

Send for **FREE CATALOG**

New 32 page "Book of Gems"

Hundreds of special values in genuine blue-white diamonds, standard watches, fine jewelry, silverware, cameras, radios and gift novelties. Each fully described and pictured. Adults send for your copy today.

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THRILLING
WONDER
STORIES

The Magazine of Prophetic Fiction

VOL. 8 No. 3
DECEMBER, 1936

IN THE NEXT ISSUE

o

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A Breath-Taking Novelette of the Threat of Universal Destruction!
By
JOHN RUSSELL FEARN

o

THE ICE ENTITY
A Novelette of Amazing Catastrophe in the Polar Wastes
By
JACK WILLIAMSON

o

INVADERS FROM THE OUTER SUNS
A Novelette of Science Exploring the Cosmos!
By
FRANK B. LONG, JR.

o

BLACK FOG
A Gripping Story of Throttled Life-Forces!
By
DONALD WANDREI

o

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ON THE COVER

Mutineers on a distant planet make a last stand against a common foe, the savage Europans. This painting depicts an incident from Edmond Hamilton's novelette, MUTINY ON EUROPA.

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Manuscripts must be accompanied by self-addressed, stamped envelopes, and are submitted at the author's risk.

HE THOUGHT HE WAS LICKED—THEN A TIP GOT BILL A GOOD JOB!

MY RAISE DIDN'T COME THROUGH MARY—I MIGHT AS WELL GIVE UP. IT ALL LOOKS SO HOPELESS.
IT ISN'T HOPELESS EITHER BILL. WHY DON'T YOU TRY A NEW FIELD LIKE RADIO?
TOM GREEN WENT INTO RADIO AND HE'S MAKING GOOD MONEY, TOO. I'LL SEE HIM RIGHT AWAY.
BILL, JUST MAILING THAT COUPON GAVE ME A QUICK START TO SUCCESS IN RADIO. MAIL THIS ONE TONIGHT
TOM'S RIGHT—AN UNTRAINED MAN HASN'T A CHANCE. I'M GOING TO TRAIN FOR RADIO TOO. IT'S TODAY'S FIELD OF GOOD PAY OPPORTUNITIES
U. S. MAIL
TRAINING FOR RADIO IS EASY AND I'M GETTING ALONG FAST.—
SOON I CAN GET A JOB SERVICING SETS—
OR IN A BROADCASTING STATION
OR INSTALLING LOUD SPEAKER SYSTEMS
THERE'S NO END TO THE GOOD JOBS FOR THE TRAINED RADIO MAN
YOU SURE KNOW RADIO—MY SET NEVER SOUNDED BETTER
THAT'S $15 I'VE MADE THIS WEEK IN SPARE TIME
THANKS!

N.R.I. TRAINING CERTAINLY PAYS. OUR MONEY WORRIES ARE OVER AND WE'VE A BRIGHT FUTURE AHEAD IN RADIO.
OH BILL, IT'S WONDERFUL YOU'VE GONE AHEAD SO FAST IN RADIO.

I'LL TRAIN YOU AT HOME
In Your Spare Time For A GOOD RADIO JOB

J. E. SMITH, President
National Radio Institute
The man who has directed the home study training of more men for Radio than any other man in America.

Many Radio Experts Make $30, $50, $75 a Week

Do you want to make more money? Broadcasting stations employ engineers, operators, station managers and pay up to $5,000 a year. Spare time Radio set servicing pays as much as $200 to $500 a year—full time servicing jobs pay as much as $30, $50, $75 a week. Many Radio Experts own their own full or part time Radio businesses. Radio manufacturers and jobbers employ testers, inspectors, foremen, engineers, servicemen, paying up to $6,000 a year. Radio operators on ships get good pay and see the world. Automobile, police, aviation, commercial Radio, and loud speaker systems offer good opportunities now and for the future. Television promises many good jobs soon. Men I trained have good jobs in these branches of Radio.

Many Make $5, $10, $15 a Week Extra In Spare Time While Learning

Practically every neighborhood needs a good spare time serviceman. The day you enroll I start sending you Extra Money Job Sheets. They show you how to do Radio repair jobs that you can cash in on quickly. Throughout your training I send plans and ideas that have made good spare time money for hundreds of fellows. I send special equipment which gives you practical experience—shows you how to conduct experiments and build circuits which illustrate important Radio principles.

Find Out What Radio Offers You

Mail the coupon now for "Rich Rewards in Radio." It's free to any fellow over 16 years old. It describes Radio's spare time and full time opportunities, also those coming in Television; tells about my Training in Radio and Television; shows you actual letters from men I have trained, telling what they are doing and earning; tells about my Money Back Agreement. MAIL COUPON in an envelope, or paste on a post card—NOW!

J. E. SMITH, President, Dept. 6M09
National Radio Institute, Washington, D. C.

HERE'S PROOF THAT MY TRAINING PAYS

N.R.I. Training Increased Yearly Salary $1,200!

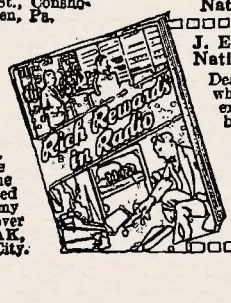
"Since securing my operator's license through N. R. I. Training, I've been regularly employed and am now chief engineer with WJBY. My salary has increased $1,200 in Radio."—JULIUS C. VESSELS, Station WJBY, Gadsden, Alabama.

$10 to $25 a Week in Spare Time

"I am making from $10 to $25 a week in spare time while still holding my regular job as a machinist. I owe my success to N. R. I."—WM. F. RUPP, 130 W. 6th St., Conshohocken, Pa.

$10,800 a Year in Own Business

"After completing the N. R. I. Course I became Radio Editor of the Buffalo Courier. Later I started a Radio service business of my own, and have averaged over $5,500 a year."—T. J. TELAAK, 897 Broadway, New York City.



J. E. SMITH, President, Dept. 6M09
National Radio Institute, Washington, D. C.

Dear Mr. Smith: Without obligating me, send "Rich Rewards in Radio," which points out the spare time and full time opportunities in Radio and explains your 50-50 method of training men at home in spare time to become Radio Experts. (Please Write Plainly.)

NAME.....AGE.....

ADDRESS.....

CITY.....STATE.....

THERE'S A MAN I'D LIKE TO MEET!

Yet a few weeks ago they laughed at his skinny shape

I'M SO SKINNY, NO GIRL CARES FOR ME. WISH I WERE LIKE JIM
GEE, JIM, I WISH I HAD A BUILD LIKE YOURS
I USED TO BE SKINNY UNTIL I TOOK IRONIZED YEAST. IT'S PUT 20 POUNDS ON ME
A FEW WEEKS LATER
WHY CHARLIE! WHAT HAVE YOU DONE TO GET SUCH A BUILD? YOU'RE AS HUSKY AS JIM
WISH I'D KNOWN WHAT TO DO SOONER, IRONIZED YEAST BUILT ME UP IN 6 WEEKS

Posed by professional models

NEW "7-POWER" ALE YEAST OFTEN ADDS 5 TO 15 LBS.—*in a few weeks!*

NOW there's no need for thousands to be "skinny" and friendless, even if they never could gain an ounce before. Here's a new easy treatment for them that puts on pounds of solid, naturally attractive flesh—*in just a few weeks!*

Doctors now know that the real reason why many find it hard to gain weight is they do not get enough digestion-strengthening Vitamin B and blood-building iron in their daily food. Now with this new discovery which combines these two vital elements in little concentrated tablets, hosts of people have put on pounds of firm flesh—*in a very short time.*

Not only are thousands quickly gaining normal good-looking pounds, but also naturally clear skin, freedom from indigestion and constipation, glorious new health and pep.

7 times more powerful

This amazing new product, Ironized Yeast, is made from special cultured ale yeast imported from Europe, the richest known source of Vitamin B. By a new process this yeast is concentrated 7 times—*made 7 times more powerful.* Then it is ironized with 3 kinds of iron.

If you, too, need Vitamin B and iron to build you up, get Ironized Yeast tablets from your druggist at once. Day after day, as you take them, watch flat chest and skinny limbs round out to normal attractiveness, skin clear to natural beauty—you're a new person.

Money-back guarantee

No matter how skinny and rundown you may be from lack of enough Vitamin B and iron, this new Ironized Yeast should build you up in a few short weeks as it has thousands. If not delighted with the results of the very first package, your money instantly refunded.

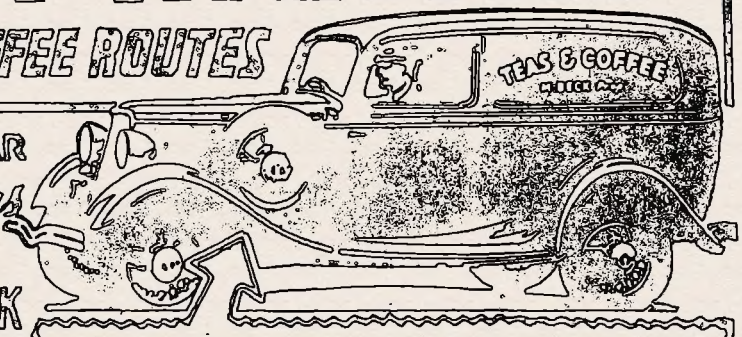
Only don't be deceived by the many cheaply prepared "Yeast and Iron" tablets sold in imitation of Ironized Yeast. These cheap counterfeits usually contain only the lowest grade of ordinary yeast and iron, and cannot give the same results as Ironized Yeast. Be sure you get the genuine. Look for "IY" stamped on each tablet.

Special FREE offer!

To start you building up your health right away, we make this absolutely FREE offer. Purchase a package of Ironized Yeast tablets at once, cut out the seal on the box and mail it to us with a clipping of this paragraph. We will send you a fascinating new book on health, "New Facts About Your Body." Remember, results with the very first package—or money refunded. At all druggists. Ironized Yeast Co., Inc., Dept. 7711, Atlanta, Ga.

MEN WANTED

for TEA and COFFEE ROUTES



MAKING REGULAR WEEKLY CALLS Pays UP TO $60.00 IN A WEEK

IF YOU want to make money I'll help you start a fine-paying Tea and Coffee Route of your own. My sensational new starting plan offers you an opportunity for big profits—up to $60.00 in a single week for full time, and up to $6.50 in a day for spare time. The business is pleasant, you set your own hours, and the opportunity for making big money is really exceptional.

I WILL GIVE YOU A FORD CAR AS A BONUS

In addition to your cash profits, I offer you a brand New Ford Car as a special bonus or extra reward. This car becomes your personal property with no strings attached. Don't delay — send for full, free facts today.

Permanent Routes Pay Big Profits

Everybody uses Coffee, Tea, Spices, Flavoring Extracts, Baking Powder, Flour, Cocoa, Canned Goods, and other foods every day. They MUST BUY these things to live. You simply take care of a regular route right in your locality—make calls on your customers once a week and keep them supplied with the things they need.

You handle all the money and pocket a big share of it for yourself. You keep all the profits—you don't divide up with anyone. Hundreds of housewives in many localities are waiting, right now, to be served with these nationally famous products.

Make Money Fast!

Look in the box on the right. See how fast these men and woman made money. They used this same plan that I will now send you. You read it: then if you see the possibilities, I'll help you start without asking you to risk a penny of your own money.

I Send Everything

Just as soon as I hear from you I will send you complete details—tell you all the inside workings of this nation-wide Tea and Coffee Route Plan. I will explain just how to establish your customers; how to service your route to make money every week. You can plan it so you give only 5 days a week to your route, collect your profits on Friday, and have all day Saturday and Sunday for vacation or rest. The plans I give you took years to perfect. You know they must be good because they have brought quick help to hundreds who needed money.

FREE WITHOUT OBLIGATION

Don't send me a cent. Just rush me your name and address on the Free Offer Coupon printed below. I will mail you all the facts Free. Then you can decide for yourself. You positively will not be obligated to go ahead unless you see big possibilities for money making fast. Send me your name on the coupon or a penny postcard. By this time next week you can be on your way to big money. Don't waste a minute —send this coupon at once.

POSITIVE PROOF

OF BIG EARNING POSSIBILITIES

Can you make money with a Tea and Coffee Route? Yes. Here's a way to make it FAST! If only three or four people had made money as fast as this, you might call it an accident. But many have done it! Here are only a few—if space permitted I could print scores of exceptional earnings. Wouldn't money like this give you a thrill? Plenty of money to spend—more where that came from—ample money for the necessities of life and still some left over for the luxuries.

	Amount earned in One Week
F. J. Mosher.....Wyo.	$60.00
Wilbur W. Whitcomb...Ohio	148.00
Clare C. Wellman.....N. J.	98.00
Geo. W. Wright.....Maine	69.75
A. Pardini.....Calif. ...	69.09
Norman Geisler .....Mich. ...	120.00
Albert Becker .....Mich. ...	100.00
Gunson B. Wood.....N. Y.....	65.00
Lamar C. Cooper.....Mich.	90.00
*Helen V. Woolmington.Pa.	45.00
*Ruby Hannen.....W. Va. .:	73.00
Hans Coordes .....Neb.	96.40
Lambert Wilson.....Mich.	79.00
W. J. Way.....Kan.	78.15

These exceptional earnings show the amazing possibilities of my offer. Don't let this opportunity pass—send me your name today for FREE plans.

MAIL COUPON Now

Send No Money—Plans Are Free

ALBERT MILLS, Route Manager,
8658 Monmouth Avenue, Cincinnati, Ohio.

Please send me—FREE—complete details for operating a fine paying Tea and Coffee Route of my own. I understand that this will not obligate me in any way.

Name

Address

City..... State.....
(Please print or write plainly)

ALBERT MILLS, Route Manager
8658 Monmouth Ave., Cincinnati, O.

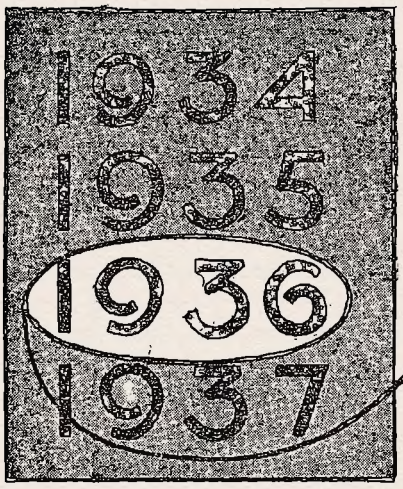
LADIES WANTED TOO!

Many ladies have had unusually good success with Tea and Coffee Routes. They say that it is possible to make as much as the men do — up to $10 in a day and more for full time, and as high as $6.50 in a day for spare time. Don't hesitate because you are a woman. Send for this information. I will be glad to send it to you free.

America's Smartest
FUN and FICTION

NOW ONLY 15c

ON SALE AT ALL NEWSSTANDS



Now is the time!

Business is Searching for YOU, if . . . .

RIGHT now, in many lines, there is a search for really *good* men—managers, leaders—men who can take charge of departments, businesses, branch offices, and get things humming.

As always, there are not enough ordinary jobs to go 'round—but rarely before, in the history of American business, has there been so much room at the *top!* New jobs are being created by the business pick-up in almost all lines—jobs that pay splendidly and that open the way to lifetime success.

Ordinarily, there would be plenty of men to fill these jobs—men in junior positions who had been studying in spare time. But most men have been letting their training slide during these dark years of depression . . . "What's the use?"—You have heard them say. Perhaps there has been some excuse for sticking to any old kind of a job one could get the past few years—but the door is wide open for the man with ambition and ability *NOW!*

And don't let anyone tell you that "Opportunity Only Knocks Once"—that's one of the most untruthful sayings ever circulated. Opportunities flourish for *every* American every day of his life.

Far more to the point is to be ready—to be *prepared*—to make yourself *interesting* to the big-time employer—and LaSalle offers you a short-cut method of qualifying for opportunity jobs in accounting, law, traffic, executive management, and kindred occupations.

LaSalle Extension University is 28 years old—averages 40,000 enrollments a year—60 American firms each employ 500 or more LaSalle-trained men—surveys show that LaSalle students attain 40% average salary increase after graduation—10% of all C. P. A.'s in the U. S. A. are LaSalle-trained.

Why not find out what LaSalle has done and is doing for men in *your* position? Send and get the facts; see what LaSalle can do for you, personally!

There's no question about it—business is picking up—jobs are looking for *men*—the time has come for you to *qualify* for prosperity. Mail this coupon today!

LASALLE EXTENSION UNIVERSITY, Dept. 11329-R, Chicago

I am in earnest about my success and I would like to have your special booklet—without any cost or obligation to me—about my opportunities and your success training in the business field I have checked.

- ☐ Business Management
- ☐ Higher Accountancy
- ☐ Traffic Management
- ☐ Modern Salesmanship
- ☐ Commercial Law
- ☐ Law: Degree of LL. B.
- ☐ Expert Bookkeeping
- ☐ C. P. A. Coaching
- ☐ Industrial Management
- ☐ Modern Foremanship
- ☐ Personnel Management
- ☐ Business Correspondence
- ☐ Business English
- ☐ Effective Speaking
- ☐ Office Management
- ☐ Stenotypy

*Name*_____ *Age*_____

*Position*_____ *Address*_____

LaSalle Extension University

Ask for one of these booklets—or a similar one on your own field of business. They are free!

Amazingly Easy Way to get into ELECTRICITY

Learn to Earn A Good Salary Every Week—or Go Into Your Own Business

Whether your age is 16 or 40. Let us train you to prepare for positions that lead to good salaries in Electricity — NOT by correspondence, but by an amazing modern method right here in the great Coyne Shops that gives you a practical Training in 90 days! Getting into Electricity is easier than you imagine if you choose the right method. **You don't need previous experience or need a lot of book learning. Start any time.**

Finance Your Training!

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"I'm sorry, folks, but Dave Gordon, our pianist, couldn't come. Isn't there someone here who can play?"

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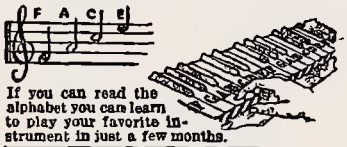

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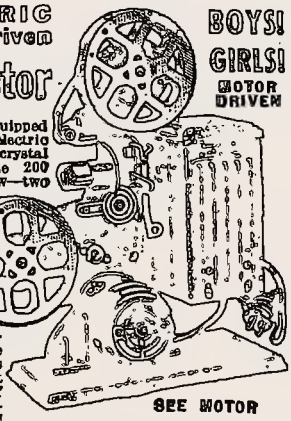

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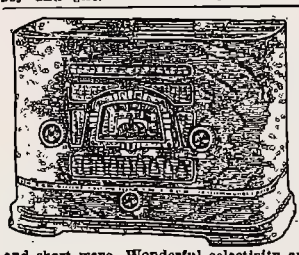

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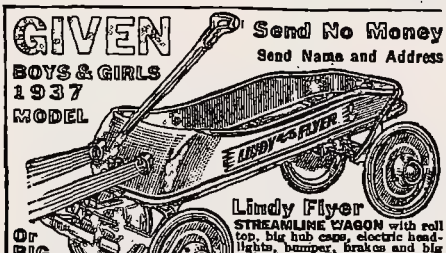

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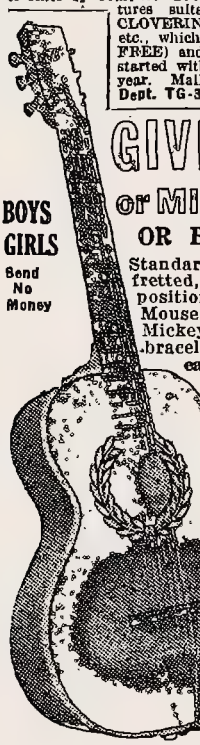

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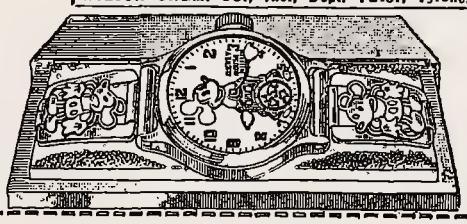

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Penton looked at Rod. "Which," he asked at length, "is you?"

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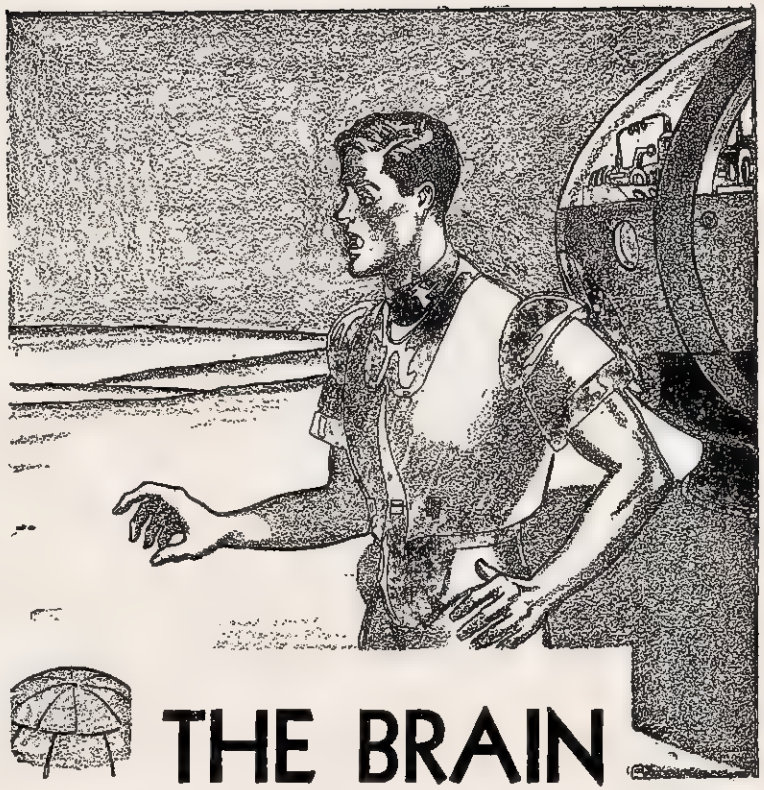

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CHAPTER I

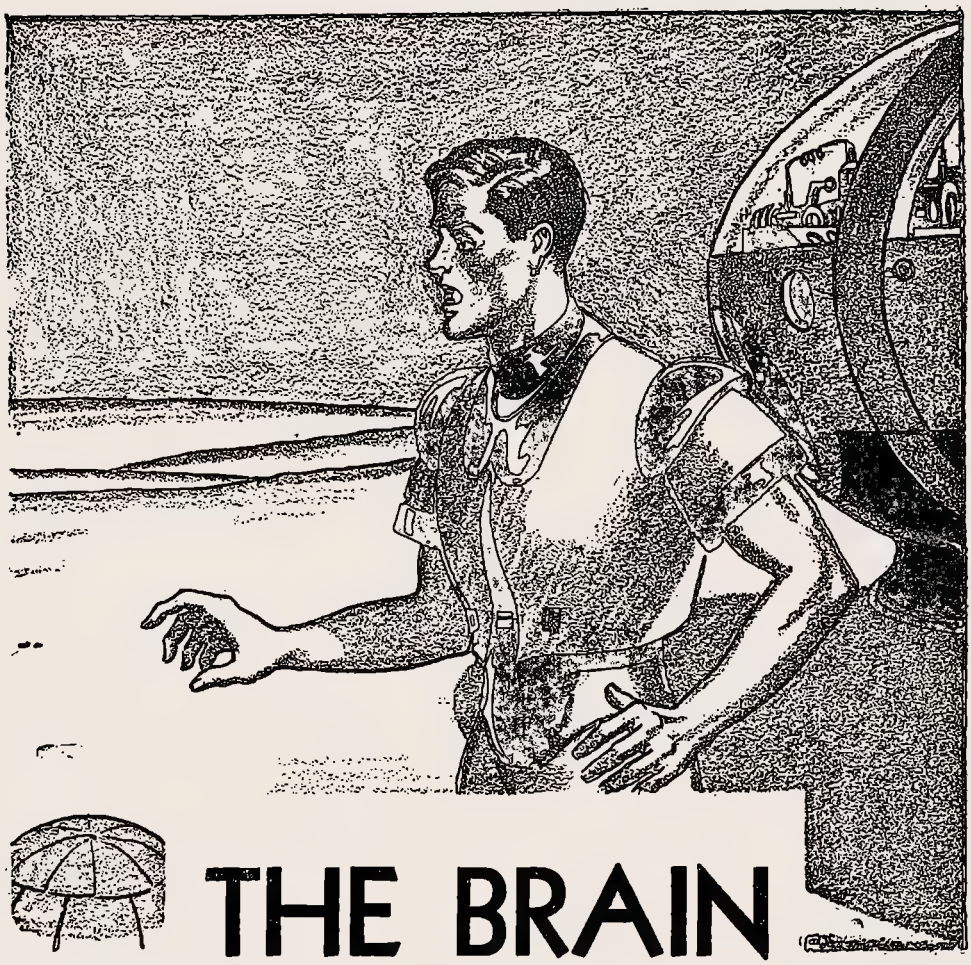
Imitation of Life

ROD BLAKE looked up with a deep chuckle. The sky of Mars was almost black, despite the small, brilliant sun, and the brighter stars and planets that shone visibly, Earth most brilliant of all, scarcely sixty million miles away.

"They'll have a fine time chasing us, back there, Ted." He nodded toward the brilliant planet.

Ted Penton smiled beatifically.

"They're probably investigating all our known haunts. It's their own



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"They're probably investigating all our known haunts. It's their own

fault if they can't find us—outlawing research on atomic power."

"They had some provocation, you must admit. Koelenberg should have been more careful. When a man takes off some three hundred square miles of territory spang in the center of Europe in an atomic explosion, you can't blame the rest of the world for being a bit skittish about atomic power research."

"But they might have had the wit to see that anybody that did get the secret would not wait around for the Atomic Power Research Death Penalty, but would light out for parts and planets quite unknown and leave the mess in the hands of a lawyer till the fireworks quieted down. It was obvious that when we developed atomic power we'd be the first men to reach Mars, and nobody could follow to bring us back unless they accepted the hated atomic power and used it," argued Blake.

"Wonder how old Jamison Montgomery Palborough made out with our claims," mused Penton. "He said he'd have it right in three months, and this is the third month and the third planet. We'll let the government stew, and sail on, fair friend, sail on. I still say that was a ruined city we saw as we landed."

"I think it was, myself, but I remember the way you did that kangaroo leap on your neck the first time you stepped out on the moon. You certainly saw stars."

"We're professionals at walking under cockeyed gravities now. Moon—Venus—"

"Yes, but I'm still not risking my neck on the attitude of a strange planet *and* a strange race at the same time. We'll investigate the planet a bit first, and yonder mudhole is the first stop. Come on."

They reached the top of one of the long rolling sand dunes and the country was spread out below them. It looked exactly as it had been from the last dune that they had struggled up, just as utterly barren, utterly bleak, and unendingly red. Like an iron planet, badly neglected and rusted.

THE mudhole was directly beneath them, an expanse of red and brown slime, dotted here and there with clumps of dark red foliage.

"The stuff looks like Japanese maple," said Blake.

"Evidently doesn't use chlorophyl to get the sun's energy. Let's collect a few samples. You have your violet-gun and I have mine. I guess it's safe to split. There's a large group of things down on the left that look a little different. I'll take them while you go straight ahead. Gather any flowers, fruits, berries or seeds you see. Few leaves—oh, you know. What we got on Venus. General junk. If you find a small plant, put on your gloves and yank it out. If you see a big one, steer clear. Venus had some peculiarly unpleasant specimens."

Blake groaned. "You telling me. I'm the bright boy that fell for that pretty fruit and climbed right up between the stems of a scissor tree. Uhuh. I shoot 'em down. Go ahead, and good luck."

Penton swung off to the left, while Blake slogged ahead to a group of weird-looking plants. They were dome-shaped things, three feet high, with a dozen long, drooping, sword-shaped leaves.

Cautiously Blake tossed a bit of stone into the center of one. It gave off a mournful, drumming boom, but the leaves didn't budge. He tried a rope on one leaf but the leaf neither stabbed, grabbed, or jerked away, as he had half expected after his lesson with the ferocious plants of Venus. Blake pulled a leaf off, then a few more. The plant acted quite plant-like, which pleasantly surprised him.

The whole region seemed seeded with a number of the things, nearly all about the same size. A few, sprinkled here and there, were in various stages of development, from a few protruding sword-leaves, to little three-inch domes on up to the full-grown plant. Carefully avoiding the larger ones, Rod plucked two small ones and thrust them into his specimen bag. Then he stood off and looked at one of the domes that squat-

ted so dejectedly in the thick, gummy mud.

"I suppose you have some reason for being like that, but a good solid tree would put put you all in the shade, and collect all the sunlight going. Which is little enough." He looked at them for some seconds picturing a stout Japanese maple in this outlandish red brown gum.

He shrugged, and wandered on, seeking some other plant. There were few others. Apparently this particular species throttled out other varieties very thoroughly. He wasn't very anxious anyway; he was much more interested in the ruined city they had seen from the ship. Ted Penton was cautious.

Eventually Blake followed his winding footsteps back toward the ship, and about where his footsteps showed he'd gathered his first samples, he stopped. There was a Japanese maple there. It stood some fifteen feet tall, and the bark was beautifully regular in appearance. The leaves were nearly a quarter of an inch thick, and arranged with a peculiar regularity, as were the branches. But it was very definitely a Japanese maple.

Rod Blake's jaw put a severe strain on the hinges thereof. It dropped some three inches, and Blake stared. He stared with steady, blank gaze at that perfectly impossible Japanese maple. He gawked dumbly. Then his jaw snapped shut abruptly, and he cursed softly. The leaves were stirring gently, and they were not a quarter of an inch thick. They were paper thin, and delicately veined. Further, the tree was visibly taller, and three new branches had started to sprout, irregularly now. They sprouted as he watched, growing not as twigs but as fully formed branches extending themselves gradually. As he stared harder at them they dwindled rapidly to longer twigs, and grew normally.

ROD let out a loud yip, and made tracks rapidly extending themselves toward the point where he'd last seen Ted Penton. Penton's tracks curved off, and Rod steamed down as fast as Mars' light gravity permitted, to pull up short as he rounded a corner of another sword-leaf dome clump. "Ted," he panted, "come over here. There's a—a—weird thing. A —it looks like a Japanese maple, but it doesn't. Because when you look at it, it changes."

Rod stopped, and started back, beckoning Ted.

Ted didn't move.

"I don't know what to say," he said quite clearly, rather panting, and sounding excited, though it was a quite unexciting remark, except for one thing. He said it in Rod Blake's voice!

Rod stiffened. Then he backed away hurriedly, stumbled over his feet and sat down heavily in the sand. "For the love of—Ted—Ted, wh-what did you s-s-say?"

"I don't know wh-what to s-s-say."

Rod groaned. It started out exactly like his own voice, changed rapidly while it spoke, and wound up a fair imitation of Ted's. "Oh, Lord," he groaned, "I'm going back to the ship. In a hurry."

He started away, then looked back over his shoulder. Ted Penton was moving now, swaying on his feet peculiarly. Delicately he picked up his left foot, shook it gently, like a man trying to separate himself from a piece of flypaper. Rod moved even more rapidly than he had before. Long, but rapidly shrinking roots dangled from the foot, gooey mud dropping from them as they shrank into the foot. Rod turned again with the violet-gun in his hand. It thrummed to blasting atomic energy, and a pencil beam of ravening ultra-violet fury shot out and a hazy ball of light surrounded it.

The figure of Ted Penton smoked suddenly, and a hole the size of a golf ball drove abruptly through the center of the head, to the accompaniment of a harsh whine of steam and spurts of oily smoke. The figure did not fall. It slumped. It melted rapidly, like a snow-man in a furnace, the fingers ran together, the remainder of the face dropped, contracted, and became horrible. It was suddenly the

face of a man whose pouched and dulled eyes had witnessed and enjoyed every evil the worlds knew, weirdly glowing eyes that danced and flamed for a moment in screaming fury of deadly hate—and dissolved with the last dissolution of the writhing face.

And the arms grew long, very long and much wider. Rod stood frozen while the very wide and rapidly widening arms beat up and down. The thing took off and flapped awkwardly away, and for an instant the last trace of the hate-filled eyes glittered again in the sun.

Rod Blake sat down and laughed. He laughed, and laughed again at the very funny sight of the melting face on the bat-bodied thing that had flown away with a charred hole in the middle of its grape-fruit-sized head. He laughed even louder when another Ted-Penton-thing came around the corner of the vegetable clump, on the run. He aimed at the center of its head. "Fly away!" he yelled as he pressed the little button down.

This one was cleverer. It ducked. "Rod—for the love of—Rod, shut up," it spoke.

Rod stopped, and considered slowly. This one talked with Ted Penton's voice. As it got up again he aimed more carefully and flashed again. He wanted it to fly away too. It ducked again, in another direction this time, and ran in rapidly. Rod got up hastily and ran. He fell suddenly as some fibrous thing lashed out from behind and wrapped itself unbreakably about his arms and body, binding him helplessly.

Penton looked down at him, panting heavily.

"What's the trouble, Rod; and why in blazes were you shooting your gun at me?"

Rod heard himself laugh again, uncontrollably. The sight of Ted's worried face reminded him of the flying thing, with the melted face. Like an overheated wax figure. Penton reached out a deliberate hand and cracked him over the face, hard. In a moment Rod steadied, and Penton removed the noose from his arms and body. Blake sighed with relief.

"THANK God, it's you Ted," he said. "Listen, I saw you—*you*—not thirty seconds ago. You stood over there, and I spoke to you. You answered in *my* voice. I started off, and your feet came up out of the ground with roots on them, like a plant's. I shot you through the forehead, and you melted down like a wax doll to a bat-thing that sprouted wings and flew away."

"Uhh—" said Penton soothingly. "Funny, at that. Why were you looking for me?"

"Because there's a Japanese maple where I was that grew while my back was turned, and changed its leaves while I looked at it."

"Oh, Lord," said Penton unhappily, looking at Rod. Then more soothingly, "I think we'd better look at it."

Rod led the way back on his tracks. When the maple should have been in sight, it wasn't at all. When they reached the spot where Rod's tracks showed it should have been, it wasn't there. There was only a somewhat wilted sword-bush. Rod stared blankly at it, then he went over and felt it cautiously. It remained placidly squatted, a slightly bedraggled lump of vegetation.

"That's where it was," said Blake dully. "But it isn't there any more. I know it was there."

"It must have been an—er—mirage," decided Penton. "Let's get back to the ship. We've had enough walking practice."

Rod followed him, wonderingly shaking his head. He was so wrapped up in his thoughts, that he nearly fell over Penton when Ted stopped with a soft, unhappy, gurgling noise. Ted turned around and looked at Rod carefully. Then he looked ahead again.

"Which," he asked at length, "is you?"

Rod looked ahead of Penton, over his shoulder. Another Rod was also standing in front of Penton. "My God," said Rod; "it's me this time!"

"I am, of course," said the one in front. It said it in Rod Blake's voice.

Ted looked at it, and finally shut his eyes.

"I don't believe it. Not at all. *Wo bist du gewesen, mein Freund?*"

"*Was sagst du?*" said the one in front. "But why the *Deutsch?*"

Ted Penton sat down slowly and thoughtfully. Rod Blake stared at Rod Blake blankly, slightly indignant.

"Let me think," said Penton unhappily. "There must be some way to tell. Rod went away from me, and then I come around the corner and find him laughing insanely. He takes a shot at me. But it looks, and talks like Rod. But he says crazy things. Then I go for a walk with him—or it—and meet another one that at least seems less insane than the first one. Well, well. I know German of course, and so does Rod. Evidently this thing can read minds. Must be like a chameleon, only more so."

"What do you mean?" asked Rod Blake. It doesn't particularly matter which one.

"A chameleon can assume any color it wants to at will. Lots of animals have learned to imitate other animals for safety, but it takes them generations to do it. This thing, apparently, can assume any shape or color at will. A minute ago it decided the best form for the locality was a sword-bush. Some of these things must be real plants then. Rod thought of a maple tree, thought of the advantages of a maple tree, so it decided to try that, having read his mind. That was why it was wilted-looking; this isn't the right kind of country for maple trees. It lost water too fast. So it went back to the sword-bush.

"Now this one has decided to try being Rod Blake, clothes and all. But I haven't the foggiest notion which one *is* Rod Blake. It won't do a bit of good to try him on languages we know, because he can read our minds. I know there must be some way. There must—there must—Oh yes. It's simple. Rod, just burn me a hole in that thing with your violet-gun."

Rod reached for his gun at once with a sigh of relief and triggered quickly. The phoney Rod melted hastily. About half of it got down into the boiling mud before Rod incinerated the rest with the intense ultra-violet flare of the pistol. Rod sighed. "Thank the Lord it was me. I wasn't sure for a while, myself."

Ted shook himself, put his head in his hands, and rocked slowly. "By the Nine Gods of the Nine Planets, what a world! Rod, for the love of heaven, stay with me hereafter. Permanently. And whatever you do, don't lose that pistol. They can't grow a real violet-gun, but if they pick one up, may God help us. Let's get back to the ship, and away from this damned place. I thought you were mad. My error. It's just the whole bloody planet that's mad."

"I was—for a while. Let's move."

They moved. They moved hastily back across the sand dunes to the ship.

CHAPTER II

The Secret of the Thushol

"THEY'RE centaurs," gasped Blake. "Will you look at that one over there—a nice little calico. There's a beautiful little strawberry roan. What people! Wonder why the city is so dilapidated, if the people are still here in some numbers. Set 'er down, will you Ted. They haven't anything dangerous, or they'd have a better city."

"Uhmmm—I suppose that's right. But I'd hate to have one of those fellows nudge me. They must weigh something noticeable, even here—about twelve hundred pounds back on Earth. I'm setting down in that square. You keep your hand on that ten-inch ion-gun while I step out."

The ship settled with a soft *thumpf* in the deep sandy dust of the ruined city square. Half a hundred of the centaurs were trotting leisurely up, with a grizzled old Martian in the lead, his mane sparse and coarse. Ted Penton stepped out of the lock.

"*Pholshth,*" the Martian said after a moment's inspection. He extended his hands out horizontally from his

shoulders, palms upward and empty.

"Friends," said Ted, extending his arms in a similar gesture, "I am Penton."

"Fasthun Loshthu," explained the centaur, indicating himself. "Penshun."

"He sounds like an ex-soldier," came Blake's voice softly. "Pension. Is he O.K.?"

"I think so. You can leave that post anyway, and shut off the main atomics, start auxiliary B, and close the rooms. Lock the controls with the combination and come on out. Bring your ion-gun as well as your ultra-violet. Lock the lock doors."

"Blazes. I want to come out this afternoon. Oh well, O.K." Blake went to work hurriedly and efficiently. It was some thirty seconds before he was through in the power room. He stepped eagerly into the lock.

He stopped dead. Penton was on his back, moving feebly, the old centaur bent over him, with his long, powerful fingers fixed around the man's throat. Penton's head was shaking slowly back and forth on the end of his neck, in a loose, rather detached-looking way.

Blake roared and charged out of the lock, his two powerful pistols hastily restored to his holsters. He charged out—and sailed neatly over the centaur's back, underestimating Mars' feeble grip. In an instant he was on his feet again, and returning toward his friend when a skillful left forefoot caught his legs, and sent him tumbling as the heavy bulk of an agile young centaur landed on his back. Blake turned; a smaller, lighter body far more powerfully muscled. In a moment the Earthman broke the centaurs' grip and started through the six or seven others that surrounded him.

A grunted word of command dissolved the mêlée, and Blake stood up, leaping toward Penton.

Penton sat on the ground, rocking slowly back and forth, his head between his hands. "Oh, Lord, they all do it here."

"Ted—are you all right?"

"Do I sound it?" Penton asked unhappily. "That old bird just opened up my skull and poured a new set of brains in. Hypnotic teaching—a complete university education in thirty seconds—all done with hypnotism and no mirrors used. They have the finest education system. God preserve us from it."

"Shthuntho ishthu thiu lomal?" asked the old Martian pleasantly.

"Ishthu psoth lonthul t i m u l," groaned Penton. "The worst of it is, it works. I know his language as well as I know English." Suddenly he managed a slight grin. He pointed to Blake and said: "Blake *omo phusthu ptsoth.*"

The old centaur's lined, sparsely bearded face smiled like a pleased child's. Blake looked at him uneasily.

"I don't like that fellow's fa—" He stopped, hynotized. He walked toward the old Martian with blank eyes and the grace of an animated tailor's dummy. He lay down in sections, and the old Martian's long, supple fingers circled his neck. Gently they massaged the back of his spine up to the base of his skull.

Penton smiled sourly from where he sat. "Oh, you don't like his face, eh? Wait and see how you like his system."

The centaur straightened. Slowly Blake sat up. His head continued to nod and weave in a detached sort of way, till he gingerly reached up, felt around for it and took it firmly in his hands. He rested his elbows on his knees.

"We didn't both have to know his

blasted language," he managed bitterly at last. "Languages always did give me headaches anyway."

PENTON watched him unsympathetically.

"I hate repeating things, and you'll find it useful, anyway."

"You are from the third planet," the Martian stated politely.

Penton looked at him in surprise, started up, then rose to his feet gingerly.

"Get up slowly, Blake, I advise you for your own good." Then to the Martian: "Why, yes. But you knew! How?"

"My great-great grandfather told me of this trip to the third planet before he died. He was one of those that returned."

"Returned?" You Martians have been to Earth?" gasped Blake.

"I guessed that," said Penton softly. "They're evidently the centaurs of legend. And I think they didn't go alone from this planet."

"Our people tried to establish a colony there, many, many years ago. It didn't succeed. They died of lung diseases faster than they could cross space. The main reason they went in the first place was to get away from the *thushol.* But the *thushol* simply imitated local Earth-animals and thrived. So the people came back. We built many ships, hoping that since we couldn't go, the *thushol* would. But they didn't like Earth." He shook his head sorrowfully.

"The *thushol.* So that's what you call 'em." Blake sighed. "They must be a pest."

"They were then. They aren't much any more."

"Oh, they don't bother you any more?" asked Penton.

"No," said the old centaur apathetically. "We're so used to them."

"How do you tell them from the thing they're imitating?" Penton asked grimly. "That's what I need to know."

"It used to bother us because we couldn't," Loshthu sighed. "But it doesn't any more."

"I know—but how do you tell them apart? Do you do it by mind-reading?"

"Oh, no. We don't try to tell them apart. That way they don't bother us any more."

Penton looked at Loshthu thoughtfully for some time. Blake rose gingerly, and joined Penton in his enwrapped contemplation of the grizzled Martian. "Uhmmmm," said Penton at last, "I suppose that is one way of looking at it. I should think it would make business rather difficult though. Also social relations, not knowing whether it was your wife or just a real good imitation."

"I know. We found it so for many years," Loshthu agreed. "That was why our people wanted to move to Earth. But later they found that three of the ship commanders were *thushol,* so the people came back to Mars where they could live at least as easily as the *thushol.*"

Penton mentally digested this for some moments, while the half hundred centaurs about stood patiently, apathetically motionless.

"We have myths on Earth of centaurs, people like you, and of magic creatures who seemed one thing, but when captured became snakes or tigers or other unpleasant beasts, but if held long enough reverted to human shape and would then grant a wish. Yes, the *thushol* are intelligent; they could have granted a simple Earth barbarian's wish."

Loshthu shook his head slowly.

"They are not intelligent, I believe. Maybe they are. But they have perfect memories for detail. They would imitate one of our number, attend our schools, and so learn all we knew. They never invented anything for themselves."

"What brought about the tremendous decline in your civilization? The *thushol?*"

The centaur nodded.

"We forgot how to make space ships and great cities. We hoped that would discourage the *thushol* so they would leave us. But they forgot too, so it didn't help."

"Good Lord," Blake sighed, "how in the name of the Nine Planets do you live with a bunch like that?"

Loshthu looked at Blake slowly.

"Ten," he said. "Ten planets. You can't see the tenth with any practicable instrument till you get out beyond Jupiter. Our people discovered it from Pluto."

BLAKE stared at him owlishly. "But how can you live with this gang? With a civilization like that —I should think you'd have found some means of destroying them."

"We did. We destroyed all the *thushol*. Some of the *thushol* helped us, but we thought that they were our own people. It happened because a very wise, but very foolish philosopher calculated how many *thushol* could live parasitically on our people. Naturally the *thushol* took his calculations to heart. Thirty-one percent of us are *thushol*."

Blake looked around with a swiftly unhappy eye.

"You mean—some of these here are *thushol?*" he asked.

Loshthu nodded.

"Always. They reproduced very slowly at first, in the form of an animal that was normally something like us, and reproduced as did other animals. But then they learned to imitate the amœbæ when they studied in our laboratories. Now they simply split. One big one will split into several small ones, and each small one will eat one of the young of our people, and take its place. So we never know which is which. It used to worry us." Loshthu shook his head slowly.

Blake's hair rose slightly away from his head, and his jaw dropped away. "My God," he gasped. "Why didn't you do something?"

"If we killed one we suspected, we might be wrong, which would kill our own child. If we didn't, and just believe it our own child anyway, it at least gave us the comfort of believing it. And if the imitation is so perfect one can't tell the difference, what is the difference?"

Blake sat down again, quietly.

"Penton," he sighed, at length, "those three months are up, let's get back to Earth—fast."

Penton looked at him. "I wanted to a long time back. Only I thought of something else. Sooner or later, some other man is going to come here with atomic power, and if he brings some of those *thushol* back to Earth with him, accidentally, thinking it's his best friend—well, I'd rather kill my own child than live with one of those, but I'd rather not do either. They can reproduce as fast as they can eat, and if they eat like an amœba —God help us. If you maroon one on a desert island, it will turn into a fish, and swim home. If you put it in jail it will turn into a snake and go down the drain pipe. If you dump it in the desert it will turn into a cactus and get along real nice, thank you."

"Good God."

"And they won't believe us, of course. I'm sure as blazes not going to take one back to prove it. I'll just have to get some kind of proof from this Loshthu."

"I hadn't thought of that. What can we get?"

"All I can think of is to see what they can let us have, then take all we can, and make a return trip with reputable and widely believed zoologists and biologists to look into this thing. Evolution has produced some weird freaks, but this is a freakier weirdness than has ever been conceived."

"I still don't really believe it," Blake said. "The only thing I am firmly convinced of is my headache."

"IT'S real enough and logical enough. Logical as hell. And hell on Earth if they ever get there. Evolution is always trying to produce an animal that can survive anywhere, conquer all enemies, the fittest of the surviving fit. All life is based on one thing: protoplasm. Basically, it's the same in every creature, every living thing, plant and animal, amœba and man. It is just modified slightly, hooked together in slightly different ways. The *thushol* are built of protoplasm—but infinitely more adaptable protoplasm. They can do something about it, make it take the form of

a bone cell and be part of a thigh bone, or be a nerve cell in a brain. From some of that ten-second-college-course Loshthu poured into me, I gather that at first the *thushol* were good imitations outside, but if you cut into one, you could see that the organs weren't there. Now they have everything. They went through Martian medical colleges, of course, and know all about what makes a centaur tick, and so they make themselves with the same kind of tickers. Oh, very nice."

"They don't know much about us. Maybe with the X-ray fluoroscope screen we could have told those imitations of us," suggested Blake.

"Oh, no, by no means. If we knew the right form, they'd read it in our minds, and have it. Adaptive protoplasm. Just think, you couldn't kill it in an African jungle, because when a lion came along, it would be a little, lady lion, and when an elephant showed up, it would be a helpless baby elephant. If a snake bit it, I suppose the damned thing would turn into something immune to snake bites —a tree, or something like that. I just wonder where it keeps the very excellent brain it evidently has."

"Well, let's find out what Loshthu can offer us by way of proofs."

CHAPTER III

Mind-Readers and Company

IT developed that the Martians had once had museums. They still had them, because nobody was sufficiently interested to disturb their age-long quiet. Martians lived centuries, and their memories were long; but once or twice in a lifetime did a Martian enter the ancient museums.

Penton and Blake spent hours in them, intensive hours under Loshthu's guidance. Loshthu had nothing but time, and Penton and Blake didn't want to linger. They worked rapidly, collecting thin metal sheaves of documents, ancient mechanisms, a thousand things. They baled them with rope that they had brought from the ship when they moved it nearer the museum. Finally, after hours of labor, bleary-eyed from want of sleep, they started out again to the ship.

They stepped out of the gloomy dusk of the museum into the sun-lit entranceway. Immediately, from behind a dozen pillars, a leaping, flashing group of men descended upon them, tore the books, the instruments, the data sheaves from their hands. They were upset, slugged, trampled on and spun around. There were shouts and cries and curses.

Then there was silence. Twelve Pentons and thirteen Blakes sat, lay or stood about on the stone stairway. Their clothes were torn, their faces and bodies bruised, there was even one black eye, and another developing swiftly. But twelve Pentons looked exactly alike, each clasping a bit of data material. Thirteen Blakes were identical, each carrying a bit of factual mustiness under his arm or in his hand.

Loshthu looked at them, and his lined, old face broke into a pleased smile. "Ah, he said. "There are more of you. Perhaps some can stay with us to talk now."

Penton looked up at Loshthu, all the Pentons did. Penton was quite sure he was *the* Penton, but he couldn't think of any way to prove it. It was fairly evident that *thushol* had decided to try Earth again. He began to wonder just—"

"Loshthu, just why," asked one of the Pentons in Penton's voice, "did the *thushol* not stay on Earth if they could live there?"

Penton was quite sure he had been the one to think of that partic—

"Pardon me, but wasn't that the question I was going to ask?" said another Penton in well-controlled fury. Penton smiled gently. It seemed evident that—

"I can apparently be spared the trouble of doing my own talking. You all help so," said one of the numerous Pentons angrily.

"Say, how in hell are we going to tell who's who?" demanded one of the Blakes abruptly.

"That damned mind-thief stole my

question before I had a chance—"

"Why you—you—you talking! I was just about—"

"I think," said one of the Pentons wearily, "you might as well stop getting peeved, Blake, because they'll all act peeved when you do. What do you know. I beat all my imitators to the draw on that remark. A noble achievement, you'll find, Rod. But you might just as well pipe down, and I'll pipe down, and we'll see what our good friend, Loshthu, has to say."

"Eh," sighed Loshthu. "You mean about the *thushol* leaving Earth? They did not like it. Earth is a poor planet, and the people were barbarians. Evidently they are not so now. But the *thushol* do not like work, and they found richer sustenance on Mars."

"I THOUGHT so," said Penton. (Does it matter which one?) "They've decided that Earth is richer than Mars now, and want a new host. Don't draw that pistol, Blake! Unfortunately, my friend, we had twenty-five ion-guns and twenty-five violet-guns made up. If we'd had more we would have more companions. We were exceedingly unfortunate in equipping ourselves so well in the matter of clothing, and being so thoughtful as to plan all of it right, so we carried a lot of each of the few kinds. Exceedingly. However, I think we can improve things a little bit. I happen to remember that one ion-gun is out of commission, and I had the coils out of two of the violet-guns to repair them. That makes three guns out of service. We will each stand up and fire, one at a time, at the sand in front there. The line forms on the right."

The line formed. "Now," continued that particular Penton, "we will each fire, beginning with myself, one at a time. First ion, then violet. When one of us evidences lack of a serviceable gun, the others will join in removing him rapidly but carefully. Are we ready? Yes?" That Penton held up his ion-gun, and pushed the button.

It didn't fire, and immediately the portico stank with his smoke.

"That's one," said the next Penton. He raised his ion-gun and fired. Then his violet-gun. Then he raised it and fired again, at a rapidly dissolving Blake. "That makes two. That one evidently found, when we fired at the first one, that his didn't work. We have one more to eliminate. Next?"

Presently another Blake vanished. "Well, well," said Penton pleasantly, "the Blake-Penton odds are even. Any suggestions?"

"Yes," said Blake tensely. "I've been thinking of a patch I put in one suit that I ripped on Venus." Another Blake vanished under the mutual fire.

"There's one more thing I want to know. Why in blazes are those phonies so blasted willing to kill each other, and though they know which is which, don't kill us? And how did they enter the ship?" Rod demanded. Or at least a Rod.

"They," said two Pentons at once. Another one looked at them. "Bad timing, boys. Rodney, my son, we used a combination lock. These gentlemen are professional mind-readers. Does that explain their possession of the guns? I've been thinking right along of one way to eliminate these excessive excrescences, consisting of you going into a huddle with your tribe, and eliminating all but the one you know to be yourself, and I doing the same. Unfortunately, while they're perfectly willing to kill each other so long as they don't die, they will prevent their own deaths by adequate, unfortunately adequate defense.

"Now since these little gun tests and others have been made I think it fairly evident that we are not going to leave this planet until the two right men are chosen and only two go into that ship with us. Fortunately they can't go without us, because while they can read minds, it takes more than knowledge to navigate a space ship, at least such knowledge as they can get from us. It takes understanding, which mere memory will not supply. They need us.

"We will, therefore, march dutifully to the ship, and each of us will replace his guns carefully in the prepared racks. I know that I'm the right Penton—but you don't. So no movement will be made without the unanimous agreement of all Pentons and Blakes."

Blake looked up, white-faced.

"If this wasn't so world-shakingly serious, it would be the damnedest comic opera that ever happened. I'm afraid to give up my gun."

"If we all give them up, I think it puts us even. We have some advantage in that they don't want to kill us, and if worst comes to worst, we could take them to Earth, making damned sure that they didn't get away. On Earth we could have protoplasmic tests made that would tell the story. By the way, that suggests something. Yes indeed, I think we can make tests here. Let us repair to this ship."

CHAPTER IV

Penton's Strategy

THE Blakes sat down and stayed down. "Ted, what in blazes can we do?" His voice was almost tearful. "You can't tell one of these ghastly things from another. You can't tell one from me. We can't—"

"Oh, God," said another Blake, "that's not me. That's just another one of those damned mind-stealers."

Another one groaned hopelessly.

"That wasn't either." They all looked helplessly at the line of Pentons. "I don't even know who's my friend."

Penton nodded. All the Pentons nodded, like a grotesquely solemn chorus preparing to recite some blessing. They smiled in superhuman unity. That's all right," they said in perfect harmony. "Well, well. A new stunt. Now we all talk together. That makes things easier. I think there may be a way to tell the difference. But you must absolutely trust me, Blake. You must give up your guns, puting all faith in my ability to detect the right one, and if I'm wrong, realize that I will not know. We can try such simple tests as alcohol, whiskey, to see if it makes them drunk, and pepper to see if it burns their tongues—"

"It won't work," said Blake tensely. "Lord, Penton, I can't give up my guns—I won't—"

Penton, all the Pentons smiled gently. "I'm half again as fast as you are, Blake, and no Martian-born imitation of you is going to be faster. Maybe these Martian imitations of me are as fast as I am. But you know perfectly well that I could ray the whole gang of you, all ten of you, out of existence before any one of you could move a finger. You know that, don't you, Rod?"

"Lord, yes, but Ted, Ted, don't do that—don't make me give up my guns—I've got to keep them. Why should I give up mine, if you keep yours?"

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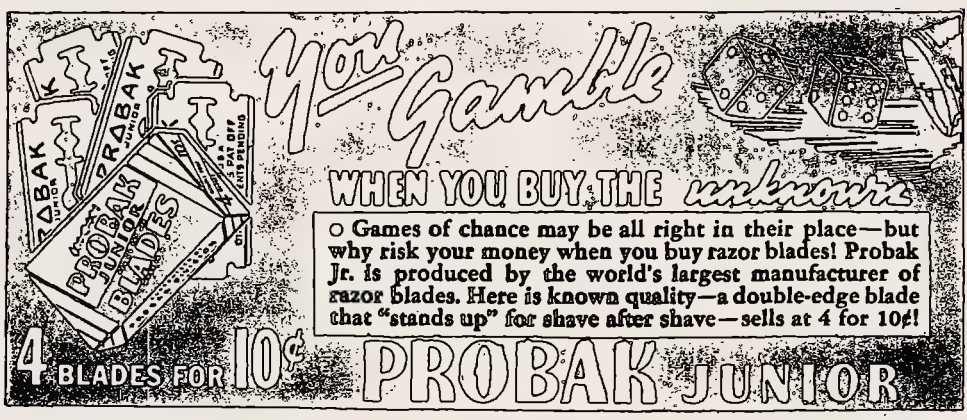
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"That probably was not you speaking, Rod, but it doesn't matter. If it wasn't what you thought, we could do something about it. Therefore, that is what you wanted to say, just as this is what I wanted to say, whether I said it or not. Oh, Lord preserve us. It talks with my voice! But anyway, the situation is this; one of us has to have unquestioned superiority over the other gang. Then, the one with the whip hand can develop proof of identity, and enforce his decisions. As it is, we can't."

"Let me be that one, then," snapped one Blake.

"I didn't mean that," sighed another. "That wasn't me."

"Yes it was," said the first. "I spoke without thinking. Go ahead. But how are you going to make the others give up their guns? I'm willing. You can't make them?"

"Oh, yes I can. I have my faithful friends, here," said Penton grimly, his eleven hands waving to his eleven counterparts. "They agree with me this far, being quite utterly selfish."

"But what's your system. Before I put my neck in the noose, I have to know that noose isn't going to tighten on it."

"If I had a sound system in mind—I'm carefully refraining from developing one—they'd read it, weigh it, and wouldn't agree at all. They still have hopes. You see that pepper and alcohol system won't work perfectly because they can read in my mind the proper reaction, and be drunk, or have an inflamed tongue at will, being perfect actors. I'm going to try just the same. Rod, if you ever trusted me, trust me now."

"All right, come on. We'll go to the ship, and any one of these things that doesn't part with its gun is *not* me. Ray it."

Blake rose jerkily, all ten of him, and went down to the ship.

The Pentons followed faithfully after. Abruptly Penton rayed one Blake. His shoulder blades had humped curiously and swiftly. Wings were developing. "That helps," said Penton, holstering his guns.

The Blakes went on, white-faced. They put the weapons in the racks in the lock stoically. The Martians had seen the, to them, inconceivably swift movements of Penton's gun hands, and Penton knew that he, himself, had done the raying that time. But he still didn't know a way to prove it without causing a general mêlée which would bring about their own deaths. That wasn't so important. The trouble was that given fifty years, the rest of the world would descend on this planet unwarned. Then all Earth would be destroyed. Not with flame and sword and horrible casualty lists, but silently and undetectably.

The Blakes came out, unarmed. They shuffled and moved about uneasily, tensely, under the watchful eyes of eleven Pentons armed with terrifically deadly weapons.

Several Pentons went into the ship, to come out bearing pepper, saccharine tablets, alcohol, the medicine chest. One of them gathered them together and looked them over. "We'll try pepper," he said, rather unhappily. "Line up!"

The Blakes lined up, hesitantly. "I'm putting my life in your hands, Ted," said two of them in identical, plaintive tones.

Four Pentons laughed shortly. "I know it. Line up. Come and get it."

"First," he sighed, after a moment, "stick out the tongue, patient."

With unsteady hands he put a bit of pepper from the shaker on the fellow's tongue. The tongue snapped in instantly, the Blake clapped his hands to his mouth, gurgling unpleasantly. "Waaaar!" he gasped. "Waar—achooo—damnt!"

With hands like flashing light, Penton pulled his own, and a neighbor's ion-gun. In a fiftieth of a second all but the single gagging, choking, coughing Blake were stinking, smoking, swiftly dissolving and flowing rubbish. The other Penton methodically helped destroy them.

Blake stopped gagging in surprise.

"My God, it might not have been the right one!" he gasped.

The ten Pentons sighed softly. "That finally proves it. Thank God. Definitely. That leaves me to find.

And it won't work again, because while you can't read my mind to find the trick that told, these brothers of mine have. The very fact that you don't know how I knew, proves that I was right."

Blake stared at him dumbly. "I was the first one—" he managed between a cough and a sneeze.

"Exactly. Go on inside. Do something intelligent. Use your head. See what you can think of to locate me. You have to use your head in some such way that they don't mind-read it first, though. Go ahead."

Blake went, slow-footed. The first thing he did was to close the lock-door, so that he was safely alone in the ship. Blake went into the control room, donned an air-suit complete with helmet, and pushed a control handle over. Then a second. Presently he heard curious bumpings and thumpings, and strange floppings and whimperings. He went back rapidly, and rayed a supply chest and two crates of Venusian specimens that had sprouted legs and were rapidly growing arms to grasp ray pistols. The air in the ship began to look thick and greenish; it was colder.

Contentedly Blake watched, and opened all the room doors. Another slithering, thumping noise attracted him, and with careful violet-gun work he removed an unnoticed, extra pipe that was crawling from the cross-brace hangers. It broke up into lengths that rolled about unpleasantly. Rod rayed them till the smallest only, the size of golf balls with curious blue-veined legs, staggered about uncertainly. Finally even they stopped wriggling.

Half an hour Rod waited, while the air grew very green and thick. Finally to make sure he started some other apparatus, and watched the thermometer go down, down till moisture grew on the walls and became frost, and no more changes took place. Then he went around with an opened ion-gun with a needle beam and poked everything visible with it.

The suction fans cleared out the chlorine-fouled atmosphere in two minutes, and Blake sat down wearily. He flipped over the microphone switch and spoke into the little disc. "I've got my hand on the main ion-gun control. Penton, I love you like a brother, but I love Earth more. If you can induce your boy friends to drop their guns in a neat pile and retire—O. K. If not, and I mean if not within thirty seconds, this ion-gun is going into action and there won't be any more Pentons. Now, drop!"

Grinning broadly, with evident satisfaction, ten Pentons deposited twenty heart-cores of ultra-essence of destruction, and moved off. "Way off," said Blake grimly. They moved.

Blake collected twenty guns. Then he went back into the ship. There was a fine laboratory at one end, and with grim satisfaction, he took down three cotton-stoppered tubes, being very careful to handle them with rubber gloves. "You never did man a good turn before, tetanus, but I hope you spread high, wide and handsome here—"

He dumped them into a beaker of water, and took beaker and glass down to the lock and out. The ten waited at a distance.

"All right, Penton. I happen to know you took a shot of tetanus anti-vaccine some while ago, and are immune. Let's see if those blasted brain-stealers can steal the secret of something we know how to make, but don't know anything about. They can gain safety by turning into a chicken, which is immune, but not as human creatures. That's a concentrated dose of tetanus. Go drink it. We can wait ten days if we have to."

Ten Pentons marched boldly up to the beaker, resting beside the ship. One stepped forward to the glass—and nine kept right on stepping. They stepped into the lee of the ship where the ion-gun could not reach.

Blake helped Penton into the ship with a broad grin.

"Am I right?"

"You're right," sighed Penton, "but God knows why. You can't get teta-

nus by swallowing it, and lockjaw doesn't develop so quickly as ten days."

"I didn't know for sure," grinned Blake. "They were too busy trying to find out what I was doing to follow your mind. Ah—there they go. Will you ray them or shall I?" asked Blake politely, sighting the ion-gun at the nine flapping, rapidly vanishing things scuttling across the red, rusty planet. The ship dipped sharply in pursuit. "There's one thing—ahhh —" he straightened as the incredible glare died in thin air, "I want to know. How in blazes did you pick me out?"

"To do what you did requires some five hundred different sets of muscles in a beautifully coordinated neuro-muscular hookup, which I didn't believe those things could imitate without a complete dissection. I took the chance it was you."

"Five hundred sets of muscles! What the heck did I do?"

"You sneezed."

Rod Blake blinked slowly, and slowly his jaw tested again its supports and their flexibility.

IN THE NEXT ISSUE

THE ICE ENTITY

A Gripping Complete Novelette of Humanity Threatened by an Amazing Invasion of the Polar Wastes

By JACK WILLIAMSON

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TRAPPED in ETERNITY

A Strange Time Machine Merges Past, Present and Future into One!

By
RAY CUMMINGS

Author of "Brigands of the Moon," "Around the Universe," etc.

I MET the surgeon's gaze as he replaced the bandages on Dora's eyes.

"I'll talk to you outside, Mr. Blair," he said.

Dora's hands groped for me as I stooped over her reclining chair, her sensitive fingers—all her seventeen years of life the eyes of her blindness—caressed my face.

"I'll be back in a moment, Dora," I said. "You just lie quiet."

The surgeon faced me on the veranda outside the living room of Dora's little bungalow here in the Westchester suburbs of New York City.

"She will never see," the surgeon said. "The operation failed."

Poor little Dora. She had hoped that the science of surgery would dispel her eternal darkness.

"All right, Doctor," I said quietly. "I'll tell her."

Dora and I sat that evening in the little moonlit garden beside the house. She had removed the bandage. Slim, blond girl, having a queerly ethereal beauty as though her blindness had set her apart from this world. Blue eyes pale, seeming always questing.

My name is Alan Blair. Details of me are unimportant, save that I was twenty-four, that August, 1936. I had met Dora Kean the year before. Her aged father, a retired professor, was

The Sun of Tomorrow rose and fell

her only close relative. He had died suddenly, leaving her alone, with this little bungalow and a small annuity. Dora and I were engaged now; to be married within a few months.

We sat, that momentous night of August 30th, 1936, with the moonlight filtering through the trees and the world a vision of beauty around us. Dora had been brave over her disappointment. She was smiling gently now. Her hands brushed my face; her smile was quizzical. "You're very handsome, Alan. I'm a lucky girl."

I laughed. "Maybe you are, and maybe not."

Then suddenly I was gripping her, and she heard my startled gasp.

"What is it, Alan?"

"Something — over there near the house. Good Lord—"

Incredible thing. I stared. In the shadows of the garden between us and the little stucco bungalow, a shape was shimmering. Wraithlike outlines, where a moment before there had been nothing.

The ghostly outlines of a cage. A cubical thing ten feet high, fifteen feet square, set upon the ground like a lion cage painted luminous, shimmering so that for the first second or two it could have been conjured by my own startled fancy.

Then I heard a vague electrical whine. And then the materialized cage was no longer shimmering. Reality! Dark lattice of bars. Small windows of a luminous transparency. A solid door. It had an interior light. The door slid sideward with a rasping click. The light silhouetted a figure peering out. A man. Then he stepped from the doorway.

He was hardly more than twenty feet away from us—a man as tall as myself, with a bullet head of closely clipped black hair. Queer figure indeed. Wide-shouldered fellow in a leather garment queerly shaped.

"Do not be afraid," he said, in an English queerly intoned. He took a few steps toward us; and as we leaped to our feet he stopped, and stood smiling.

"I am Sah Groat," he began. "I live here." He gestured with a thick powerful arm at our little moonlit garden. "This is my home. I have come back to visit you."

AMAZING visitor! He sat presently, cross-legged on the ground beside us while we gaped at him and listened to his amazing words. Visitor from the future! Our garden—the living room of his home, six hundred years from now! This cage his vehicle with which, at will, he was traveling back and forth through the centuries!

We sat, feeling like untutored savages, while he tried to make us understand the mysteries of this science which to him was so comprehensible.

"Between the four planes of Space —length, breath, thickness and time," he said, "there is no essential distinction. Science, ever since the days of your Albert Einstein, has recognized that Time is a property of Space. A house has length, breadth and thickness. *And duration.* Without duration, it would have no real existence."

Space-time. The blending out of which the Universe is built. And then he tried to show us how the future and the Past, co-exist with what we call the Present; the same Space-dimensions, but with the Time-dimension altered.

"I don't think I can conceive that," I said.

"No," he agreed, "because your whole conception of Time is illogical. For instance: Suppose, with your human intelligence, you were a tree, rooted here in this garden. Suppose that the normal order of things was that New York City would come slowly toward you and pass before you. Time normally does that for us. But you, if you were that tree, could you conceive going across Space and reaching New York City? Could you believe that New York City exists there now? We humans can imagine moving through Space — because we have always done it. But the tree would say, 'New York City *will be* here. It will exist.' The future! You understand? The tree would never realize the present, unperceived

existence of New York City, and the possibility of swiftly going there by altering one's Space-dimensions!

"The same is true with Time. It has a normal change of dimension, so that if we do nothing to alter that dimension, we are like the tree. We think that nothing exists until Time brings it before us!"

Amazing thing, but I seemed to be grasping it. "You mean," I said, "you are able to cause an abnormal change in the Time-dimension?"

"Yes." He smiled. "We define it, altering substance by altering the rate and character of the motion that constitutes the electrical vortex we call the proton."

"That," I said, "I most positively do not understand."

"Because," he retorted, "you are not aware of what all substance really is. Matter—with its dimensions of Space-time—it is molecules, composed of atoms. But what is an atom? A ring of electrons—which are particles of negative, disembodied electricity, revolving at very high speeds around a central nucleus of positive electricity, which we call a proton. But of what substance — what character — is the proton? Why even in nineteen-twenty-three, or perhaps before that, the theory was established that the proton merely is a vortex. A whirlpool. An electrical whirlpool in Space! That robs Matter of the last vestige of substance! A thing built merely of movement!

"Everything is electrical—or akin to it. The character of everything depends upon Matter's inherent vibratory motion. Thus, to alter the Time-dimension, we alter the rate and character of that vibration—that basic vortex—the proton."

He gestured to his time-vehicle. "I can give you only fundamentals—the machine itself is not abstruse, merely mechanically intricate. Every particle of Matter in that vehicle—and my own body when I am in it—is electrical in its basic nature. The mechanism circulates a current through every particle of that Matter. An electronic current. It causes the inherent vibratory movements of the protons of Matter to change their character. The matter changes its state. It acquires a different Time-factor. A different Time-dimension. A series of different dimensions, I should say—so that the progressive changes constitute a traveling through Time. Like the tree, uprooted, changing its position in Space."

TIME traveling! And here, in this same space that now held Dora's little bungalow and garden, Sah Groat's home existed in the year 2536. He was a research physicist. Suddenly I envisaged all the immensity of things and events of what we call the Past, Present and Future, that crowded our little garden! The moonlight fell upon our strange visitor as he sat cross-legged on the ground. Strange man from the future. I guessed that he might be thirty years old. Or perhaps far older. His facial skin was drawn tightly over high cheek-bones. It was a queerly luminous skin. Weird.

A different sort of human? I found myself suddenly shuddering, as though here, gazing at him, I was trying to fathom the unknown. Something about him—weird, indefinable—and frightening. His gestures were queer—all his movements abnormal to the aspect of any man I had ever seen before; and frightening, because I could not define their abnormality.

Absurd thoughts! I tried to dispel them. Then suddenly I realized that he was queerly staring at Dora as she sat tense, with her sightless eyes questing the sound of his voice.

"Your mate?" he said abruptly.

"We are going to be married soon," I answered.

Still his gaze clung to her. I stared at his eyes. They were strangely brooding. The eyes of one who has seen too much. Or was there something lacking in this weird man's eyes? Something that should be there, but was not?

"She is very strangely beautiful," he said quietly.

Did Dora have some intuition? I saw her smile abruptly fade, and over

her sensitive face came a vague expression of revulsion and fear.

"I have never seen a woman's beauty like hers," Groat added. "Her eyes see nothing. You should have that fixed."

I told him how we had tried. Still his look never left Dora's face. And suddenly he said, as though abruptly he had made a decision.

"My surgeon could fix that—in a few minutes. A pre-natal optical defect—not a disease. A little mechanism of lens and nerves to be repaired." He shrugged his high wide shoulders, with a queer jerking gesture. "I will take you to my surgeon."

It made my heart leap. A surgeon of six hundred years from now, with all the skill and knowledge that the centuries had brought!

Dora gasped, "Why—oh, if you only could."

"How—how long will it take?" I murmured.

"The trip? How long? That means nothing. I can make it take what seems a few minutes of your consciousness."

A few minutes—to get to this super-surgeon! An excitement struck at me so that I lost all caution.

Groat was gesturing again. "My surgeon lives just down that little hill—he will come at once if I send for him."

I LED Dora over the threshold of the little cage—a rectangular metal room glowing with soft violet light; a few strangely fashioned metal chairs; an instrument table of fragile-looking tubes, dials, levers and coils.

"Do not be afraid," Groat said softly. "Sit here by this bull's-eye—"

He seemed reluctant to tear his luminous brooding gaze from Dora. Then he sat at the instrument table. I saw a long row of time-dials marking the centuries, the years, months and days. In the silence the small lever clicked as he shoved it. There was a low hum. The dark bars of the cage abruptly glowed luminous—a pallid glow that suffused all the cage, bathed us in its electric light.

I felt my senses reel as we swept off into Time. But within an instant my senses steadied. The pallid light in the cage was soft but so strangely intense that I could fancy it was penetrating every atom of my body, every tiny cell within me vibrating from its touch. It connected the mesh of the cage bars so that we seemed in a luminous room of translucent walls.

But the one bull's-eye beside us remained transparent. Amazing sight! I saw the moon and all the stars swinging from the zenith to the horizon. The sun of Tomorrow rose and plunged in a swift arc; the day was gone.

Accelerated motion. Night and day now were so swiftly succeeding each other that they blended into a luminous grey monochrome of twilight. Then in another moment the four seasons themselves were blended. Silent, dead-looking monochrome landscape, queerly lacking in detail so that as I gazed at any one spot only grey blurred blankness seemed there.

"Oh Alan—tell me about it! You forget that I cannot see."

I tried to describe it.

"What a pity—a girl so beautiful," I heard Groat say, "always in darkness. You will see presently, my dear."

The indicators of the Time-dials were all in motion . . . 1956 . . . 1970 . . . 2000 . . . A new century. . . .

Again I gazed out through the bull's-eye. The same blurred landscape of luminous grey. No! There was movement now! Things through the years changing, the sum of their tiny daily movements now becoming visible. I gazed to the south; with a slow crawling movement of blurred grey detail, I could see the rising oncoming city. Towering giants of buildings were blurred against the monochrome of sky. Silently the monstrous grey city engulfed us. We were indoors.

2100 A.D. . . . 2200. . .

New centuries . . progress. . . . For a breath that might have been a hundred years it seemed that we were in some huge amphitheatre, with a vast domed roof high above us. Then

the roof was leprous. A catastrophe of nature? An earthquake. or some great storm? Or the ravages of war? Then the roof was gone. Walls again were rising.

2400 A.D. . . . I found Groat standing gazing at Dora. "We will be there in a moment. I have set the automatic controls. Come Dora—"

He extended his powerful long-fingered hand toward her; but a sudden impulse made me move between them.

"Thanks," I said. "I'll guide her."

2500 . . 2520 2530 . . . Then I could count the years. . . . Then the months of 2536. And then days of the summer.

OUTSIDE one of the other bull's eyes a soft steady violet light was visible—the interior of a room in which now our cage was standing. I could see a blurred, nearby wall. The cage was wafting slowly upward a foot or so to take a slightly new position in Space.

Then the automatic controls snapped off. The cage bars went dark. Faint distant sound was audible.

Groat slid the door open. "Come Dora, my child — my home — we are here."

I held her arm to guide her as we stepped over the vehicle's threshold into the world of 2536.

It was a long grey apartment, with a vaulted roof from which a soft light was streaming. A heavy piled grey carpet was on the floor; the walls were grey-draped, windowless. Luxurious padded metal furniture stood about. Mechanisms of daily life doutine were on a wall instrument panel.

"The place where I was born," Groat said softly. "You like it?"

Our little garden! Crowded bit of Space, with only Time to hold separate its myriad aspects! And Groat added as I seated Dora in a chair:

"You — my visitors from the barbaric past—" He was smiling so that his thin lips bared his shining white teeth. "I will get the surgeon—Dora must see my home. See—me—"

He made an aerial connection. On a luminous screen the image of a face appeared. A man of ruddy complexion with a shining bald pate. His shoulders disclosed that he was robed in immaculate white.

"Doctor Freane? We need you," Groat said.

"Oh—you, Xax VI?"

"Yes—Sah Groat—you know me. The Master bids you come—an eye operation—at once—"

Presently a low tinkling bell sounded. The surgeon and two white-robed women entered. They went instantly about their work with Dora—lenses and lights to examine her eyes—surgical instruments. They hardly spoke. But they stared at the time cage, and at me and Dora—to them queer barbaric people of history.

The surgeon, hardly interrupting his work, said abruptly:

"Groat—your Master should not use that cage. You have stopped in the twentieth century — these people are from there, by the look of them."

"Yes," Groat agreed.

"But it is forbidden," the surgeon said. "Your permit is for exploratory time traveling, but never to stop in another Time-world."

"I am returning these visitors," Groat said. "It will not occur again."

"Make your Master understand it, Groat. It is not like Jason XI—himself so great a scientist—to transgress his permit."

I stood tense, holding Dora's trembling hand as I watched the operation. Painless, swift and sure. A minute? Five minutes? Then suddenly, as all the apparatus was whisked away, the surgeon plunged the room almost into darkness.

"Now child, open your eyes." His voice was gentle.

DORA'S eyelids fluttered up. The light! She gasped. Her blue-eyed gaze swung toward the sound of my tense, excited breathing.

"Why—why Alan— I see you! Alan dear—"

Civilization marching upward. Progress. Always progress.

For that moment I held the tearful Dora, both of us flooded with

thankfulness. The nurses quietly had departed. The surgeon stood beside us. Groat had momentarily gone into the time cage.

And suddenly in the grey restful hush of the dim apartment there came a groan! A low scraping thump! A man groaning in mortal agony!

We stood transfixed. From a dark nearby recess a figure appeared, crawling, hitching itself forward on the padded floor. A man of middle age. Dying. One of his arms and shoulder seemed partly burned away by a searing flash.

He gasped faintly, "You Freane? Help! I am—"

The surgeon swung. I heard him murmur, "By my God—you, Jason—"

"I am—finished—you can't—" His agonized face dropped against the floor. He was dead.

In the silence, Dora gave a low scream of horror as she shuddered against me. Then a violet flash hissed. For just an instant Freane, the surgeon, seemed to stand tottering, leprous with part of his body burned away. Then he fell.

A second or two. I had no time to move. I saw, in the doorway of the cage, that Groat was standing with a luminous cylinder in his hand. The skin of his face was wrinkled into a snarl that bared his white teeth.

"Stand still—" he rasped.

Around us, from his cylinder, the hissing violet light sprang circular, so that we stood barred. Then Groat snapped off his weapon. The light vanished. Some of the room drapes were burning.

"If you try to trick me—both of you will die," Groat said softly. "You Alan — lead her here — " Then he laughed with a wild sudden triumph. "I forgot. She can see now. A woman complete. Come, you two—"

He stood beside the doorway, watching with alert weapon. I saw that from head to foot he was trembling; his voice was a low, purring growl; his eyes, luminous with triumph, seemed to dart fire at us.

"We are going," he said. "Get inside."

A madman! For just an instant I hesitated. Then I drew Dora over the threshold. Behind us Groat came in. The door clicked. And like a pouncing animal Groat leaped for the controls. The cage flooded with luminosity, surged with electrical hum.

The shock of starting was far greater than before. Then as our senses steadied, I found that Dora had dropped into a chair and that I was standing beside her. From the instrument table came Groat's voice: "We travel fast this time. Do not move—I can kill you with a movement of my finger—"

I glanced out through the bull's-eye. Already the walls of the draped apartment were gone; the cage was outdoors with blurred grey terraces of the giant city looming everywhere into the sky around us. And Dora with her new-found sight, was gazing; so amazed, awed, confused that her senses seemed numbed.

Then I got my wits. I turned slowly to regard Groat. He sat facing us, sprawled tense at the instrument table, one of his hands on the controls, the other gripping his weapon.

"The trip back won't take long?" I said.

His grin bared his teeth. "Back? We are going forward. A real voyage now—" He glanced at his instruments. "4152. You see, we are making speed."

I stared at him, numbed, helpless, wordless. And then I murmured, "Forward? But why, Groat?"

HE said, with a mounting wild triumph, "I do not like my Time-world. Nor yours. We are going forward—very far. Where we can be alone! Dora—complete woman now. And I—Sah Groat—complete man. We will pick ourselves a time in this same Space—to be alone—to start a new race. Jason said it can't be done—it's against all laws of nature. But I'll show him—I'll outsmart Time!"

I sat numbed, shuddering. Was he wholly demented, or a rational fiend? He added. "A new race—from one mated pair. It can be made biologically possible. And you Alan—our

servant. You will be useful with your health and strength in so many ways. Do not talk to me now. I am busy—I must select our home."

He still was alert with his weapon. I did not dare move. Strange little Dora. In the sudden emergency now, her confusion was vanishing. As though with the passing of her blindness, here was a new Dora. And suddenly she whispered:

"Alan—if we could get that weapon—"

But how? His fingers never left it. My own confusion was passing. I was tense, alert, watchful—but I tried not to show it.

"Look outside!" Groat said. "The real changes are beginning."

We swept past the year 10,000. . .

Amazing grey, shifting panorama outside our little window. I could see now over a vast distance. The Titanic city was spread everywhere. The old familiar outlines of the enduring hills were changed now. Altered by the mechanisms of man. Beacon lights sometimes flashed for what might be a hundred years. Was this the summit of man's achievement? For a breath, the melting structures were replaced by others of their kind. Mankind resting on the summit. Then I saw a section of the vast intricate structures melt down, crumbling from some catastrophe. And edifices, smaller, rose up.

Our forward Time-sweep was so swift now that I could see only the broad fundamental changes. Triumphant city neglected. Then at last it broke up and dropped into ruin and desolation.

50,000 A.D. Then 100,000. . . . Innumerable smaller cities had appeared and vanished. Always smaller. More transitory. . . . Struggling little hamlets whose life span was so brief to my sight that they came and went like flickering shadows. . . . I saw the blurred changes of great storms. Gigantic cataclysms of nature. . . . Pitiful remnants of mankind, still struggling here.

200,000 years . 500,000. . . . Ice had come and gone. . . Then the grey of a temperate, perhaps habitable climate. . . . Human beings still here? . . . Probably. But their futile, pitiful efforts were so briefly enduring that I could not see them. . . .

Suddenly Dora and I became aware of Groat's voice. "Why—I—I've gone too far. We do not want to live in so wretched a place as this. I will turn back." He still held his weapon. His gaze still eagerly consumed Dora's beauty. I felt her tense beside me. But he did not touch the controls. He seemed thinking only of Dora's beauty. And he added abruptly:

"Come here, Dora—you sit here by me. We must pick our future home."

She stood up. "I'll make a chance for you!" she whispered swiftly.

AMAZING little Dora. Smilingly she sat beside him, with his burning gaze upon her face and his hand like a claw gripping her shoulder. With a sudden startled amazement her glance went to the window. The end of the world! It was a great, soundless, blurred chaos. The Earth was gone! Numbed, I stared, as Dora was staring. Around us now there was only an illimitable grey void with the blurred streaks of stars. Soon perhaps, it would be empty of everything.

Eternity. . . . We were trapped here. Trapped in eternal, soundless emptiness. . . Eternity, stretching on and on—into the infinitude of Forever. . . .

Groat seemed engrossed only with Dora. Madman, plunging us on into the endless void. . . . I saw presently that as he gazed with his smoldering eyes upon her beauty, his hand laid his weapon momentarily on the table. I tensed. And Dora's hand, moving to touch him as though with a caress, dropped suddenly down and swept the weapon to the floor.

With a rasping scream Groat was on his feet, meeting my leap. The impact of my body knocked him backward. He fell, with his head and shoulder striking against a chair. . . . Gruesome fall! He lay twitching, his mouth gaping, eyes wildly rolling, and a low, rasping, grinding pant issu-

ing from his lips. Then the light went out of his eyes.

I stood gripping Dora. "Dead," I murmured. "We're safe now. I can work the controls. I saw how he did it."

"Yes. Safe now—Alan—"

The body of Groat lay still. I stepped over him. I moved the control levers, slowly through the different intensities of Time-change. And then presently we were heading back.

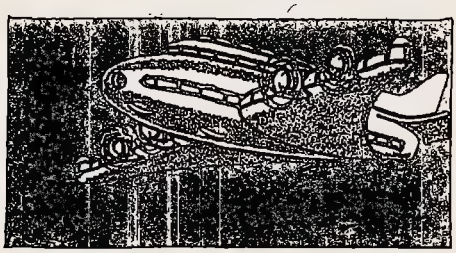
"Alan—dear God—"

At Dora's terrified clutch I swung from the instruments. Groat again was twitching. His body rolled across the room. His head dangled on his broken neck. His skull had split open.

What was this? A human brain, enmeshed with tiny wires! In the brief struggle I had torn away his shirt. Imbedded in the flesh of his chest was the circular disc of a fuse-box!

Damnable thing in human form! Parts of a man, body and brain, pieced together in the laboratory by the skill of science! A thing that should have been under the will-control of a Master. With a flash of realization I recalled the surgeon's words. He had mentioned the Master! The scientist, Jason XI, who undoubtedly had invented the time cage. And created this thing which was a man in everything but the lack of soul. That indeed, was what I had sensed missing in its eyes! This damnable thing, running amok, stealing the cage, roaming aimlessly through the centuries—attracted by Dora.

In that moment as we stared, the deranged human body lurched waveringly upon its feet. The legs were buckling. It fell against the door. The pressure slid open the door. For a moment the staggering body toppled on the brink. Then it was gone, swallowed by the silent grey void of Eternity.



In the Next Issue: INVADERS FROM THE OUTER SUNS, a Breathless Novelette of Science Exploring the Cosmos, by FRANK B. LONG, Jr.

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"Look at the meter for the cathode electronizer," said the scientist.

They Thought They Could Conquer Civilization with Professor Hobson's Invention—but One Unexpected Spark Upset Their Cunning Plans!

By EANDO BINDER

Author of "The Hormone Menace," "Enslaved Brains," etc.

"STAND still, professor. We've got a gun on you!"

The tall, spare man at the work-bench, dressed in a grey laboratory coat, turned slowly. He put down the electrometer in his hand. When he had faced about, he took in the two masked figures emerging from the supply room door. Then his eyes fastened on the ugly-looking silencer-equipped pistol one of them held levelled at his heart, and to the snub-nosed automatic the other carried. The look of annoyed surprise in his face changed to stunned bewilderment. What could burglars want in the electrical laboratory of a research scientist?

"We're not common house-breakers," informed the taller of the

intruders. He pocketed his automatic. The handkerchief, where it covered his mouth, wrinkled as if he were smiling. "No, not burglars. We've come for something more precious than money." He paused as if waiting for an answer, but the scientist merely stared.

"What we want is—*that!*"

The masked man pointed to an apparatus set at one end of the long work-bench. Resembling the inner workings of a radio, with many tubes and coils, it did not look like the radically new invention it was. Three feet above, supported by bakelite rods, was a parabolic mirror of shining chromium. The scientist did not turn to look where the finger pointed, but his eyes widened suddenly and then narrowed. He stared at the intruders in silence.

"You're taking it pretty calmly, Professor Hobson. You must realize that your invention could do much harm—in the wrong hands!"

"Harm?" queried the scientist, speaking for the first time. "I don't quite understand." He went on:

"It transmits high frequency energy over the ether, but only in a dephased —or call it static—form. It has the virtue of small power loss, but gives its own little twist in the process. The received energy takes the damnable shape of 'blobbed' electricity. Factory-made static, in plain words. It's like transmitting a dog and having it come out in the form of frankfurters. You see—"

"You can save the rest, Professor Hobson," cut in the taller man. He motioned to his companion, then walked close to the scientist. I'll tell you what your gadget can do in an enlarged form. It can take up and shoot out as a beam any given kilowattage, in high frequency form, a distance of a hundred miles without a serious power loss. The electrical energy thus transmitted without wires cannot be received in useful form, for it is dephased—lumped and knotted in static nodes. But, Professor, it has the peculiar faculty of inducing violent charges in metallic obstructions. *Killing* charges, Professor!"

THE eyes of the two men locked. The other masked man stood at his side, gun in hand pointed unwaveringly at the scientist.

Again the masked man smiled beneath his handkerchief, a smile that, revealed, would have been sardonic.

"Think once, Professor Hobson, of that beam centered on an airplane high up. Think of those thousands of watts curling into a vortex around the pilot, searing him to a crisp in three seconds. Think of it as a death ray sweeping across an advancing army's front—picture each gun sparkling like a superstatic machine, charring each soldier's hand and arm. Imagine this beam centered on an arsenal, changing metal containers to hot bolts of electricity!"

The scientist broke the tense silence that followed with a chuckle. Yet his eyes remained grim and narrow. He straightened a fold of his lab coat, and spoke quietly:

"Why have you approached me in this way? With guns—like burglars. Why not an appointment at my home?"

"Purposes of secrecy," retorted the other shortly. "I represent a foreign power. To be melodramatic, I am a spy. In the traditional spy manner, I came in through an open window. Our organization spotted your first article in the *Electronic Journal* on power transmission via ether. After the third article, announcing the static feature of the experiment, our scientists became vitally interested. Three months ago you had succeeded in your work to the point of eliminating most of the power loss. We thought that was all we needed. Huge projectors were built, modeled after your apparatus. But they didn't work the way they should have. Something was lacking."

The scientist merely raised his brows as the speaker looked pointedly at him.

"The key to the whole thing—something the articles didn't reveal—rested in the inventor's mind. Our offer is a hundred thousand if you'll give us the formula locked in your brain."

"Hm. A hundred thousand," mused the scientist. "A hundred thousand dollars for the formula that would unloose a hell of rays on unsuspecting human beings. The answer, gentlemen, is—no!"

The masked man looked at the scientist sharply.

"Two hundred thousand!"

"My formula is not for sale!"

The two masked men exchanged glances. The shorter of them took a step forward. The nose of his gun tilted slightly. But the other masked man waved him back, faced the scientist.

"Don't be a fool, Professor!" he grated. "You're in no position to refuse." His tone changed to mockery. "If you're thinking of pulling a little coup when the night man comes around at twelve let me inform you that both the night man and watchman are quietly working off a heavy dose of blackjacking! We've had you under observation for weeks, and knew your habit of working in this laboratory many nights. That made it easy—just a matter of getting the two watchmen out of the way. So now, what choice have you?"

Professor Hobson could sense the triumphant grin behind the other's mask. His own features he forced to remain expressionless. It helped to calm his beating heart.

"If I refuse, what then?"

Something of a harsh chuckle came from behind the mask as the spy answered:

"The alternative is what you might expect." He jerked a thumb backward. "My partner has a quick trigger finger."

"I see," breathed the scientist. "But if you killed me, my formula would die with me."

"You forget there is the machine itself, Professor. We could take it away and solve the secret from that. Yet that would be much trouble, and would take time. We would much prefer to get the formula direct from you, and we would pay you well and have you our friend rather than our enemy."

The scientist heaved a sigh and straightene up. He shrugged, resignedly.

"You win, gentlemen." As he spoke, he moved toward the desk in the corner of the laboratory.

"Stop! Stop where you are!"

Hobson turned in surprise.

"But you want the formula for the key part of that apparatus. I must write it down for you."

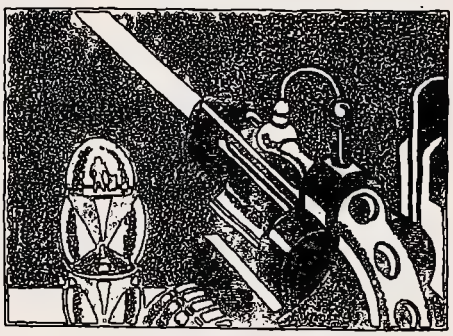
"Clever, Professor, clever," said the spy mockingly. "But we wouldn't be able to use the *wrong* formula. You're going to give me the formula I want in words. I'll write it down."

"But you wouldn't understand. It's in complicated mathematical symbols."

THE spy laughed derisively.

"I am a scientist, as well as a spy. I know my vectors and alphas. For that reason I was chosen for this mission—so that I could check on the spot the formula which is the key to your beam projector. Let's get busy, Professor."

The spy made his way to the apparatus at the end of the work-bench. The other masked man shifted his position, moved closer to that side of the large laboratory. Noting how methodical these movements were,



Professor Hobson felt the sinking feeling that comes with a hopeless situation.

He could see no way out. The menacing gun barred any escape. His secret formula must be given out—to save his own life. His own life! But what of those countless lives that would be lost as a direct result of this? What of those thousands, perhaps

millions, who would die by electrocution through his discovery! For the scientist had no doubt that whatever country was back of this night's doings would make full use of the destructive powers of his invention.

Professor Hobson was still deep in these thoughts as he reached a hand into the heart of the machine and extracted from it a pear-shaped object of glass and metal.

"It is easy enough," he began as the spy listened, "to transmit through the ether forms of high frequency energy, but the power loss is tremendous. My approach to the problem was to discover a new medium of transmission —the sub-ether, which—"

"You had all that in your various papers in the *Journal*," cut in the spy. "I am familiar with every step of your operations except the final one of giving your beam a definite form like a beam of visible light."

"Simply neo-cathode emanation," explained the scientist. "I run the induced high frequency energy into this cathode electronizer, trap it, and send it out as a cathode ray, which, as you know, is a beam instead of a radiation."

"You trap it! There's the secret. Just how, Professor, do you trap it?"

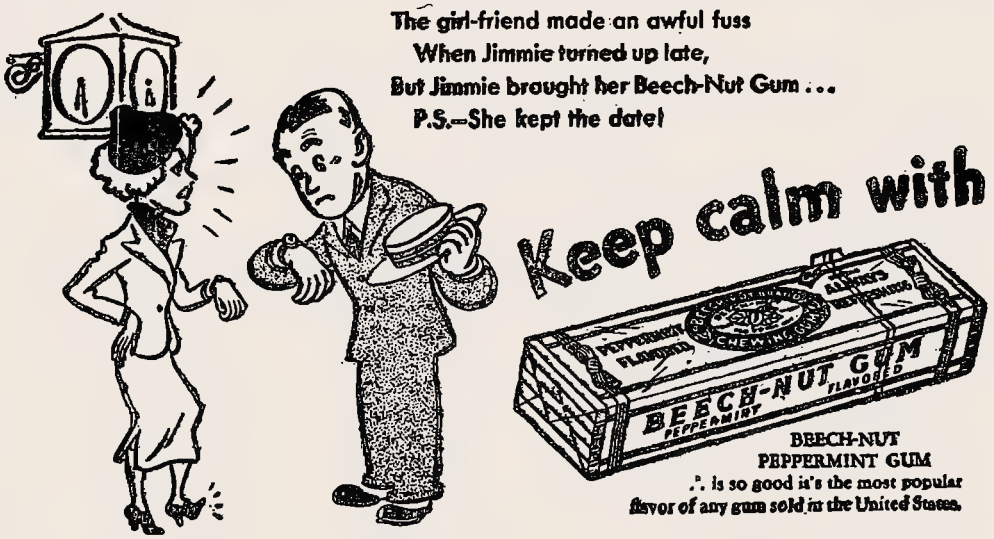
The scientist took a long breath, looked once hopelessly around, and then began the explanation of the secret he alone knew. For many minutes he talked, poured out in quick words the amazing method by which he converted his energy into a beam. A dawning look of comprehension came into the masked scientist's eyes. It was like pouring liquid into a wide funnel and having it come out in a needle-thin stream.

Suddenly Professor Hobson stopped, perspiring.

"I must demonstrate at this point," he said. In his eyes was a grim, wild purpose. His lips twitched. But before the spy looked into his face, in sudden suspicion, he had controlled his emotions. He brought a guileless smile to his lips. "You will understand better what follows if I show how the meters read at each stage of the process."

"All right," agreed the scientist spy. "But I'm warning you, Hobson, any trickery and—" He gestured toward his henchman. "You're well covered, Professor. Now go on with your little demonstration."

THE scientist nodded, put the pear-shaped cathode tube back in the machine with nervous fingers. He clipped it firmly into place. He snapped a switch, turned a dial. A hum sounded, increased in pitch, reached its tone level and stayed there. With the twist of a rheostat knob, a bank of tubes glowed forth like pale coals. "I am setting it first at fifty


The girl-friend made an awful fuss
When Jimmie turned up late,
But Jimmie brought her Beech-Nut Gum ...
P.S.—She kept the date!
Keep calm with
BEECH-NUT GUM
PEPPERMINT FLAVORED
BEECH-NUT
PEPPERMINT GUM
... is so good it's the most popular
flavor of any gum sold in the United States.

watts," said the professor. "Watch the readings now."

But it was not until the scientist had thrown the final switch that the masked man, still suspicious, took his eyes off his face and looked down at the dials.

"See?" indicated the scientist. "The power lumps up—becomes static. And this static is no more useful than the static which sneaks into radio programs. As I increase the power—one hundred watts this time—the dephasing value increases. You see, at a glance, the inherent defect of this machine for energy transmission."

"But what an ideal long range weapon," said the masked man with shining eyes. "What power it has and—"

"One hundred and fifty watts," interrupted the scientist. "Look at the meter for the cathode electronizer. You'll notice the 'beat note' is more pronounced with increase of power. Now two hundred watts—notice there is less and less flow—more and more concentrated power in the 'beat notes.'"

"Two hundred watts is your capacity, isn't it?" reminded the spy. "The cathode electronizer is getting hot. Better shut it off, or—"

"Two hundred and fifty watts!" shouted the scientist suddenly, giving the power dial a savage twist, "and watch her blow all to hell!"

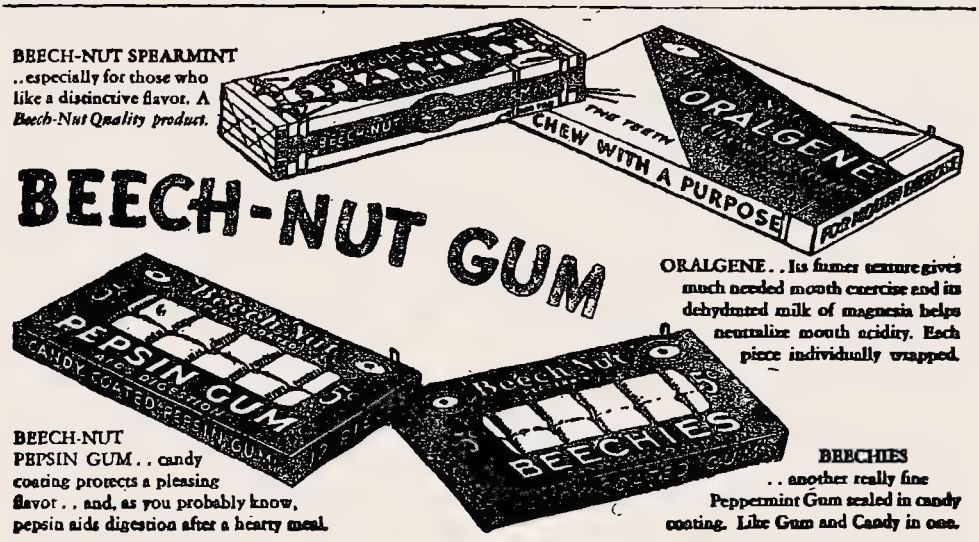
The masked man jerked erect with a startled oath. The man with the gun steadied his hand, pressed his finger. Professor Hobson flung an arm before his eyes, jumped back.

HE heard two loud noises then, so close together so as to be almost simultaneous. The pungent sting of ozone filled his lungs.

Ten minutes later, although reeling from loss of blood from his shoulder wound, Professor Hobson had finished smashing the machine to pieces. The secret of destructive beam transmission would die with him; the world was better off without it.

Then he leaned pantingly against the work-bench and looked again at the two huddled bodies on the floor, both hideously mangled. When the police came, they would want to know what had exploded every cartridge in the guns the two men had carried, killing them both instantly.

"They'll never know," muttered Professor Hobson to himself, "that in putting the cathode electronizer in place, I put it into a reverse position, making a common static machine out of it. The built-up twenty thousand volts then jumped to the nearest metal, which was their guns, as I planned." He laughed weakly, almost hysterically. "I was explaining beam transmission, and all the while it was spark transmission . . . static . . ."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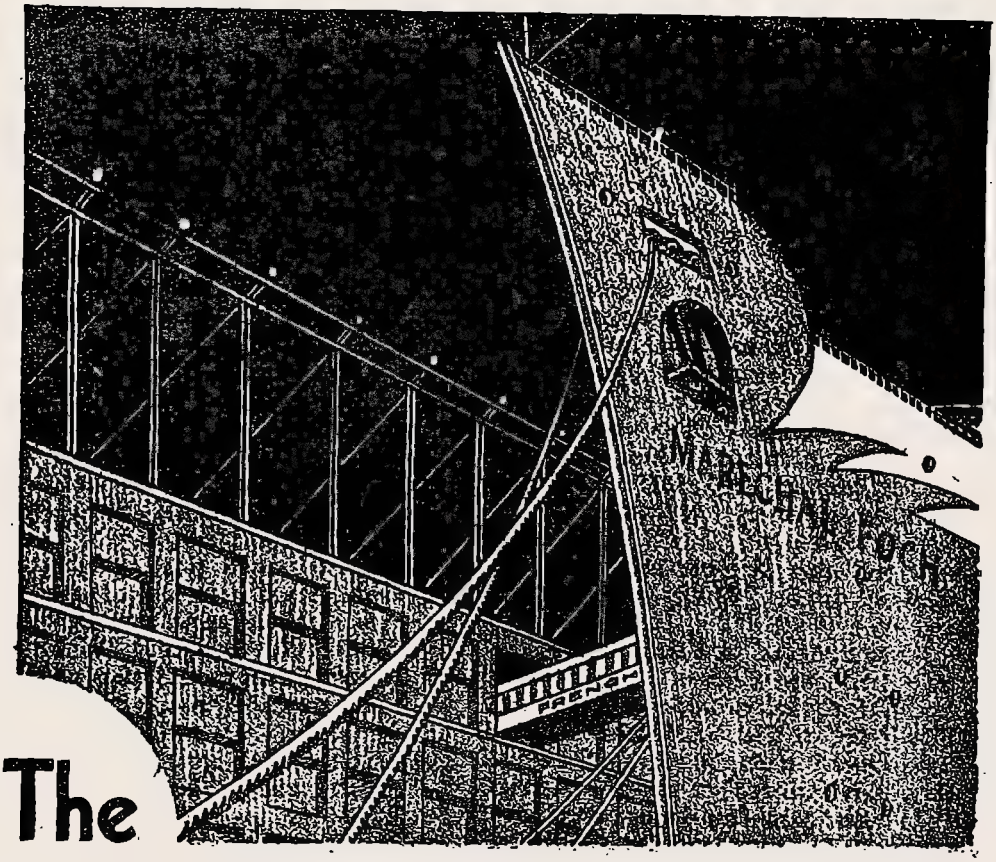
BEECH-NUT GUM
CHEW WITH A PURPOSE
THE TEETH
ORALGENE
PEPSIN GUM
CANDY COATED PEPSIN GUM
BEECHIES
ORALGENE..Its firmer texture gives much needed mouth exercise and its dehydrated milk of magnesia helps neutralize mouth acidity. Each piece individually wrapped.
BEECH-NUT PEPSIN GUM..candy coating protects a pleasing flavor..and, as you probably know, pepsin aids digestion after a hearty meal.
BEECHIES ..another really fine Peppermint Gum sealed in candy coating. Like Gum and Candy in one.



The LANSON SCREEN

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A Complete Novelette

By ARTHUR LEO ZAGAT

Author of "The Land Where Time Stood Still," "Spoor of the Bat," etc.

CHAPTER I

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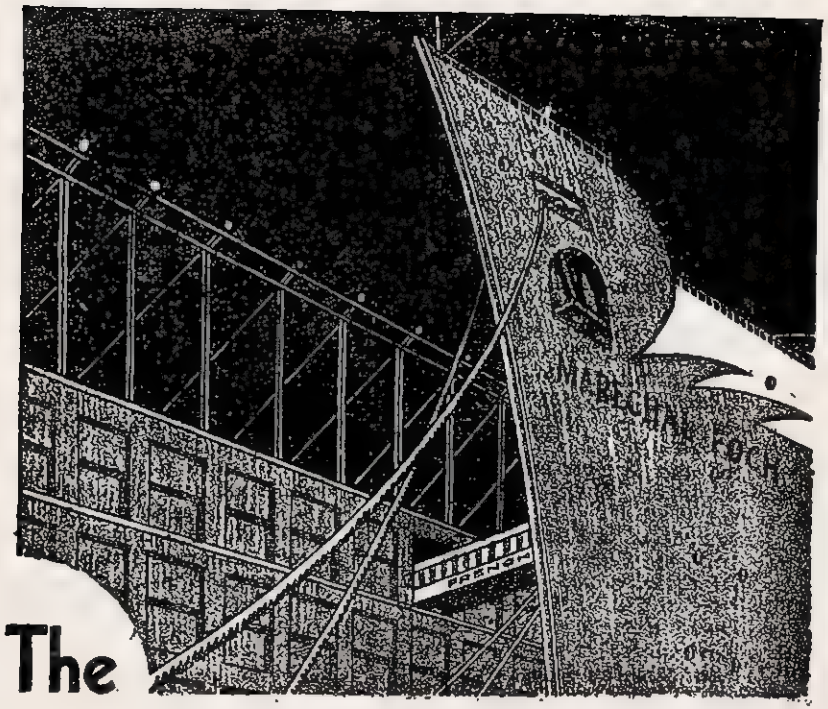

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"Queer. The ship seems to be cut in half. It's quite distinct up to a certain point, then there just isn't anything more. What's happened?"

a halt. Brown dots appeared from the passenger car behind its locomotive and clustered in ordered confusion about the other oblong that completed the train's complement.

What appeared from his altitude to be a rather large pocket-handkerchief slid from the car and spread out on the grass. A metal tube glittered in the sun, came into motion, swivelling to the east. It looked like a cap-pistol, but Osborn knew it to be an eighteen-inch railroad gun.

He slanted down through lambent air. The terrain below was flat, lushly green. It was entirely vacant save at the very center of its five-mile sweep of marsh. Here a small hut was visible in the middle of a hundred-yard area ringed by a water-filled moat.

Two manikins stood before the structure. One was clothed in o.d., the other in black. The civilian's tiny arms gesticulated, and he went into the house. The army man moved sharply into an automobile and sped in the direction of the waiting artillery train.

"Five minutes to zero, Harry." The voice of Jim Rayners, his observer, sounded in the pilot's earphones, "What's the dope?"

"Target practice, Jim." We're to spot for the railroad gun and then we're to bomb. The target is—Good Lord!"

The plane wabbled with Osborn's sudden jerk on its stick, steadied. "Harry!" Raynes exclaimed. "What is it, Harry?"

"The target's that house down there. There's a man inside it. I saw him go in."

"The hell! What's the big idea?"

"Search me. There's no mistake though. Orders say 'absolute secrecy is to be maintained by all participants in this maneuver as to anything they may observe . . .'"

"Maybe it's an execution. Something special. Maybe—"

"'. . . and this order is to be obeyed to the letter no matter what the apparent consequences.'" Osborn finished. "General Darius Thompson signed it personally, not 'by direction.' Tie that, will you?"

"I can't. But—it's orders." Osborn levelled out, got his eyes focussed on the astounding target.

Suddenly there was nothing within the watery circle. Not blackness, or a deep hole, or anything similarly startling but understandable. It was as if a blind spot had suddenly developed in his own visual organs so that he could not see what there was at that particular point, although the wide green expanse of the swampy plain was elsewhere clear and distinct.

* * * * *

A KEY scraped in the door of a third floor flat on Amsterdam Avenue. Junior's two-year-old legs betrayed him and he sprawled headlong on the threadbare rug in the little foyer.

John Sims bent to his first-born, tossed him into the air, caught him and chuckled at the chubby, dirt-grimed face. He'd been tired as the devil a moment before. But now—

June Sims was flushed from the heat of the kitchen range, but her black hair was neat and a crisply ironed house dress outlined her young, slim figure. Junior was a warm bundle against her breasts as she kissed John.

"You're early, dear. I'm glad."

"Me too. What's for supper?"

"Pot roast." June's hazel eyes danced. "Johnny, mother phoned. She's going to come over tomorrow night to take care of Junior so that we can go out and celebrate your birthday."

"That's right! Tomorrow is May ninth!"

"Yes. Listen, I have it all planned. 'Alone With Love' is playing at the Audubon. We'll see that, and then splurge with chow mein. I've saved two dollars out of the house money just for that."

"You have! Maybe you'd better get yourself a hat. I saw an ad—"

"Nothing doing. We're going to celebrate! You go downtown."

And so on, and on. . .

* * * * *

"They're starting, Harry."

Raynes' businesslike crispness somewhat eased Lieutenant Osborn's feeling that something uncanny was happening down there and his hand was steady as he jerked the stick to cope with the bump of the big gun's discharge. A dirt mushroom sprouted in the field.

"Short, two-tenths. Right, four point three," Jim intoned, correcting the range.

A white panel on the ground acknowledged his message. The cannon fired again and slid back in the oil-checked motion of its recoil.

"Over, a tenth. Center."

The target was bracketed, the next try must be a hit. Harry banked, levelled out. The brown dots that were the gunners jerked about feverishly, reloading. Whatever it was that obscured his vision of the shack would be smashed in a moment now.

The gunners were clear. The pilot saw an officer's arm drop in signal to fire. Yellow light flickered from the big rifle. Osborn imagined he saw the projectile arc just under his plane. His eyes flicked to where that house should be.

And nothing happened! No geyser of dirt to show a miss, no dispersal of that annoying blind spot. Had the gun misfired?

Wait? What was that black thing gliding in mid-air, sliding slowly, then more rapidly toward the ground? The shell that could pierce ten inches of armor was incredibly falling along what seemed the surface of an invisible hemisphere.

It reached the grass and exploded with the contact. The earth it threw up spattered against—*nothing*. Why hadn't the shell exploded on contact with whatever had stopped it? What was going on down there?

"I—I can't make a report, sir." There was a quiver in Jim's phlegmatic voice. Even his aplomb had now been pierced. "I think it would have been a hit, but—"

Again and again the great gun fired. Osborn and Raynes got the signal to go ahead, dropped five three-hundred pound bombs point-blank on the mysterious nothingness. The area around the circular canal was pitted, excavated, scarred as No Man's Land had never been.

Aviation Lieutenant Harry Osborn flew back to Mitchel Field in the gathering dusk. His young head was full of dizzy visions. Armies, cities, a whole nation blanketed from attack by invisibility. Spheres of nothingness driving deep into enemy territory, impregnable.

It was good to be alive, and in the o.d. uniform, on this eighth day of May in 1937.

IN the tea room of the Ritz-Plaza, the violins of Ben Donnie's orchestra sobbed to the end of a melodic waltz. Anita Harrison-Smith fingered a tiny liqueur glass nervously.

"I'm afraid, Ted. What if he suspects, and—"

The long-fingered hand of the man whose black eyes burned so into hers fisted on the cloth.

"Afraid. That has been always the trouble with you, Nita. You have always been afraid to grasp happiness. Well, I can't make you do it. But I've told you that I'm sick of this hole-and-corner business. If you don't come with me tomorrow, as we have planned, I go alone. You will never see me again."

The woman's face went white and she gasped.

"No! I couldn't bear that. I'll come, Ted. I'll come."

Van Norden's sharp, dark features were expressionless, but there was faint triumph in the sly purr of his voice.

"Have you got it straight? The *Marechal Foch* sails at midnight tomorrow from Pier 57, foot of West Fifteenth Street. You must get away from the Gellert dance not later than eleven-thirty. I'll meet you at the pier, but if there is a slip-up remember that your name is Sloane. Anita Sloane. I have everything ready, stateroom, passports, trunks packed with everything you can possibly

need. You have nothing to do but get there. Whether you do or not I'll sail. And never come back."

"I'll be there," she breathed.

"Good girl. Tomorrow is the ninth. By the nineteenth we will be in Venice."

CHAPTER II

The Screen

GENERAL DARIUS THOMPSON stood at the side of his olive-green Cadillac and looked at his watch. The bombing plane was a vanishing sky-speck just above the horizon, the railroad-gun had chugged back toward its base. He was alone under the loom of that sphere of nothingness against which the army's most powerful weapons had battered in sheer futility. It existed. It was real. Unbelievably.

A man was in the doorway of the flimsy hut that had been the target of the shells. Quarter-inch lenses made his bulging eyes huge; his high-domed head was hairless and putty-colored; his body was obscenely fat. Professor Henry Lanson gave one the impression that he was somehow less than human, that he was a slug uncovered beneath an overturned rock. But his accession to the Columbia University faculty had been front page news and the signal for much academic gloating.

"Well." From gross lips the word plopped into the warm air like a clod into mud. "What do you think now, my dear General? Against my Screen your biggest shells were as puffballs. Yes? Your most gigantic bombs as thistledown. You thought me utterly insane when I insisted on remaining within." The scientist grinned, humorlessly. "What do you think now?"

Thompson shook his grizzled head, as if to rid it of a nightmare. "You took an awful chance. Suppose it had cracked."

"Cracked! In the name of Planck cannot you understand that the Lanson Screen is not matter that can crack?" The other spread veined, pudgy hands. "It is the negation of all energy, a dimensionless shell through which energy cannot penetrate. And since matter is a form of energy—" The physicist checked himself, shrugged. "But what's the use? I cannot expect you to understand. Besides myself there are perhaps a dozen in the world who could comprehend, and none is an American. Enough for you to know that I had to be inside to operate the B machine that cut the negative force the A apparatus set up. From outside it could not be done. The Screen would have remained forever and you would not be convinced there had been no effect of your bombardment within it."

"Could you not have managed some remote control device, some way of working your B machine from outside?"

"Lord, but you military men are stupid!" the physicist burst out exasperatedly. "Don't you understand yet that once the Lanson Screen is erected all within is as absolutely cut off from the rest of the universe as if it were a different space, a different dimension? Nothing can penetrate within—electricity, wireless, the cosmic rays, the sun's radiations. Nothing!"

"Then if a city were covered by it, as you suggest, there would be no means of communication with the outside?"

"That is correct."

"If knowledge of this were universal there could be no more war." Thompson's grey eyes lifted and met the other's. A momentary silence intervened while a message flashed between these two so diverse characters. Then the general went on. "But if it were the exclusive property of a single nation that nation could become master of the world."

Lanson nodded. His voice betrayed knowledge of the *rapprochement* established in that single, long glance "If I published my results I should gain very little from it. But if I sell it to one power it is worth almost anything I choose to demand.

That is why I have worked at it alone. That is why I have never set the details down on paper, to be stolen. After I have sold the invention to you secrecy will be your concern, but till you meet my terms all knowledge of how I produce the effect remains here in my brain." Lanson tapped his clifflike brow. "Here and nowhere else."

"After we purchase it you might still sell your device to others."

"With a million dollars in hand I shall have no temptation to do so. No one could want, or use, more. That is one reason why you should be willing to recommend its payment."

The general shrugged. "I can get it for you when I am convinced that you can veil an entire city as you did this one small house. It seems to me impossible, or so tremendous a task, requiring such huge installations, such vast power, that it would be forbiddingly costly."

THE physicist's grating, short laugh was contemptuous. "I'll shield New York for you with the same machine I used here, with the same power—storage batteries not larger than those in your car. Their energy is needed for only an instant, to start the complex functioning of forces whose result you have just witnessed. I'll erect a screen for you about Manhattan Island, an ellipsoid as high and as deep as the least axis of the enclosing rivers. Will that satisfy you?"

"If you can do it, and I cannot blast through, it will. When can you get ready?"

"As soon as I can move my machines to the required location, and set them up. Tomorrow night, if you wish."

"Very well. What help do you require?"

"Only an army truck to convey my apparatus, and, since I will use the rivers as a delimiting guide for the screen, a place near the water to set it up."

The general was eager now, eager as the other. "I'll order a truck out here at once. And there is an army pier at West One Hundred and Thirtieth Street that you can use. I'll see that it is made ready for you."

* * * * *

Midnight of May eighth, 1937. An army truck noses into the Holland Tunnel. On its flat bed are two tarpaulin-covered bulks, machinery of some sort. Its driver is crowded against his wheel by the rotund form of a black-clad civilian whose chins hang in great folds on his stained shirt and whose bulging eyes glow behind thick lenses with a strange excitement. The truck comes out on Hudson Street and turns north.

Tenth Avenue is alive as puffing trains bring the city's food for tomorrow. A herd of bewildered cattle file into an abattoir. West End Avenue's apartment houses are asleep. Under the Riverside Viaduct a milk plant is alight and white tank trucks rumble under its long canopy. At One Hundred and Twenty-ninth Street the army van waits for a mile-long refrigerator car, loaded with fruit from California, to clear the tracks it must cross. The way is cleared. The truck thunders across cobbles and steel, vanishes within the dark maw of a silent pier.

Two blocks eastward a lighted subway train crawls out on its trestle for a breath of air, pauses fleetingly, dives underground again like a monstrous serpent seeking its burrow. Above the southward course of that burrow midtown Broadway is a streak of vari-colored illumination, exploding into frantic coruscation and raucous clamor at Forty-seventh Street. Crowds surge on sidewalks, in shrieking cabs, private cars; pleasure seekers with grim, intent faces rushing to grills, night clubs; rushing home, rushing as if life must end before they can snatch enough of it from greedy Time. Blare of the latest swing tune sets the rhythm for them from a loudspeaker over the garish entrance of a so-called music store.

Time writes its endless tale in

letters of fire drifting along a mourning band around Time's own tower.

MARKET CLOSES STRONG TWO POINTS UP
PRESIDENT ANNOUNCES RECOVERY ACCOMPLISHED
CHAMPION CONFIDENT OF VICTORY FRIDAY
HITLER DEFIES LEAGUE
POLICE WILL SMASH DOCK RACKET SAYS VALENTINE
GIANTS WIN. . . .

There is no Mene, Mene, Tekel Upharsin written on that slender wall for some prophet to read.

FELIX HAMMOND knots the gold sash rope of his black silk dressing gown. His satin slippers make no sound as they cross the thick pile of the glowing Kermanshaw on the floor of his study to a darkly brooding Italian Renaissance secretary. He fumbles in the drawer for a silent moment, pulls out a book whose tooled leather cover should be in some museum. He sits down, opens the book.

Minuscular, neat writing fills page after page. Hammond reads an entry. Something that might be a smile flits across his ascetic countenance. His bloodless lips wince at another item. He riffles the sheets rapidly to the first blank space, reaches for a fountain pen and starts writing.

May 8: Wednesday. Another day gone. I confess I do not know why I continue this diary, except, it may be, that it serves as a reminder of the utter futility of life. There are, however, certain scarlet pages, and lavender ones also, that still have the power to titillate emotions I thought long atrophied. I wonder if anyone save I will ever read them.

Aloysia opened in her new show tonight. I have just come from the theatre. She wanted me to join the supper Stahlbaum is giving the company, but I declined with thanks—thanks that I was in a position to decline. Time was that I should have leaped at the invitation, but I no longer need to share her with others. Her part suits her—Norton has given her fully two-thirds of the lines and she trails languid sensuality across the stage to her heart's content. I noticed that she used that trick with the mouth she first developed for my benefit. It was lost on the rabble. . . .

* * * * *

Eleven p.m., Thursday, May ninth, 1937.

Item: June Sims hangs on her husband's arm as they exit from the Audubon Theatre. Her eyes sparkle with happiness. She sighs tremulously. Then; "Johnny. Maybe we'd better call up and see if Junior is all right before we go eat."

Item: Anita Harrison-Smith peers over the shoulder of her black-coated dance partner with narrowed eyes. The florid-faced, heavy man in the alcove they are just passing is her husband. His companion is Rex Cranston, president of the A. P. & C.

Without hearing she knows their talk is of debentures, temporary reactions, resistance points on Cumulative Index graphs. Howard Harrison-Smith has forgotten Anita exists, will remain oblivious of her till she comes for him to take her home.

Her small red lips set in a firmer line. He has a long wait ahead of him tonight.

Item: Aloysia Morne lets her ermine cape slide into Felix Hammond's deft hands. He bends and kisses her where a shoulder no less white than the snowy fur melts into the perfect column of her neck. She turns with studied grace, and her throaty voice reproduces the deepest note of a 'cello.

"Do you know, Felix, this lovely place of yours is more home to me than my own so-grand rooms." Hammond smiles thinly, and does not answer.

Item: In the dim light of a decrepit pier jutting into the Hudson Professor Henry Lanson is more than ever like a gigantic larva as he putters about a grotesque combination of steel rods and glittering, lenticular copper bowls out of which a brass cylinder points telescopelike at the zenith.

An arm-thick cable crawls over the pier's frayed boards, and coils over

their edge to the water. Lanson turns and checks connections on another, smaller machine.

Far across the Hudson's black surface loom the Palisades. A dash of yellow luminance zigzags against their ebony curtain, a trolley climbing to where an amusement park is an arabesque of illumination against the overcast sky.

To the right the cables of George Washington Bridge dip, twin cantenaries of dotted light, and rise again. A red spark and a green one are the apices of moiré, chromatic ribbons rippling across the water to the pier head from the deeper shadow of an army launch.

Braced vertically, five feet behind that pier head, is a whitewashed steel plate. This is the target for the automatic rifle that will be fired from that bobbing launch as a first trial of the Lanson Screen's efficacy.

Other tests will follow, later. But General Thompson will not yet chance firing artillery into Manhattan.

Henry Lanson calls, in his voice without resonance, "Ready, General. Ten minutes for the first try."

From across the water Thompson snaps, "Ready. Go ahead."

Lanson lumbers back to his machine, thrusts at a lever. There is no sound, no vibration. Suddenly the river, the Palisades, disappear. The amusement park is gone, the inverted necklaces of pearly light that mark the bridge cables. There is no sky. Lanson looks at his wrist watch.

"Ten minutes," he chuckles. "He couldn't get through in ten thousand years."

He is very sure of himself, this man. But perhaps there is a minute residum of doubt in his mind. After all, he has never experimented with so vast an extension of his invention's power. He thuds to the steel target, puts one doughy paw against it, leans out to view its riverward surface. Will there be any flecks of black on it to show the impact of the bullets that are being fired at it?

Is he warned by a sound, a creak? One cannot know. At any rate he is too obese, too ponderous, to avoid catastrophe. Under his leaning weight the steel plate rips from flimsy braces. Falls.

Its edge thuds against the physicist's head, knocks him down, crushes his skull.

Professor Henry Lanson's brain, and its secrets, are a smear of dead protoplasm mixed with shattered bone and viscous blood.

ELEVEN - TWENTY - EIGHT p.m., Thursday, May ninth, 1937.

The lights are dim in Foo Komg's pseudo-Oriental establishment. John Sims spoons sugar into a hot teapot.

"I'm going to make a lawyer out of Junior," he says slowly. "He'll go to Dartmouth for his academic course and then to Harvard. He won't have to start working right out of high school like I did."

John is reminded of the days before June belonged to him by the setting, by the dreamy light in her eyes.

"Let's walk down Broadway," he says, "when we get through here." That is what they used to do when all the glittering things in the store windows did not seem quite as unattainable as they did now.

"No, Johnny. I want to go home. I have a queer feeling there's something wrong Mother isn't so young any more, and she's forgotten what to do if a child is croupy or anything.

"Silly. Nothing's wrong."

"Take me home, hon."

"Oh all right." Petulantly. "It's just like you to spoil things. . . ."

Anita Harrison-Smith slips out of the side door of the old Gellert Mansion on East Sixty-first Street. She signals a taxi.

"Pier Fifty-seven." Her violet eyes are deep, dark pools and a visible pulse throbs in her temple.

Nobody looks at the sky. Nobody ever looks at the sky in New York. Nobody knows the sky has suddenly gone black, fathomless.

Later:

"Nita!"

"Ted!"

"You did come! Here, driver, what's the fare?"

The cab circles in Fifteenth Street, vanishes eastward. Van Norden takes the woman's arm.

"Have any trouble getting away?"

"No." She is quivering. "Hurry darling. Let's get on board before anyone sees us."

"There's some trouble. Fog or something. The pier doors are closed, but the officials say they'll be open again directly. They won't sail without us."

"Look Ted, it *is* a heavy fog. Why, you can't see the river from here. Even the other end of the ship is hidden. But there isn't any haze here. Queer. The ship seems to be cut in half; it's quite distinct up to a certain point, then there just isn't anything more. It's black, not grey like fog ought to be."

"Let's go in that little lunch wagon till we can get aboard. Nobody will look for us in there."

"Let's. I'm afraid, Ted. I'm terribly afraid. . . .

Nobody looks at the sky except General Darius Thompson, bobbing in a little launch on the Hudson. He is staring at vacancy where New York had been a quarter hour before. Up the river the cables of the great Bridge come out of nothingness, dip, and rise to the western shore.

Toward the Bay there is nothing to show where the metropolis should be. No light, no color. Nothing. Sheer emptiness. He looks at the radiant figures on his watch once more.

"Wonder what's keeping the old fool," he growls. "He should have dissipated the screen five minutes ago."

The night is warm, but General Thompson shivers suddenly. An appalling speculation beats at his mind, but he will not acknowledge it. He dares not.

A hundred yards from Thompson, in another space, a device of steel and copper and brass stands quiescent over the unmoving body of the one man who knew its secret.

Into the dim recesses of the army pier a dull hum penetrates, the voice of a million people going about their nightly pursuits, unaware, as yet, of doom.

CHAPTER III

1997

IN his cubicle on the hundred and ninetieth floor of New York University's Physics Building, Howard Cranston watched the moving needle of his Merton Calculator with narrowed eyes. If the graph that was slowly tracing itself on the result-sheet took the expected form a problem that had taxed the ingenuity of the world's scientists for sixty years would be solved at last.

The lanky young physicist could not know it, but the electrically operated "brain" was repeating in thirty minutes calculations it had taken Henry Lanson three years to perform, two generations before. His own contribution had been only an idea, and knowledge of the proper factors to feed into the machine.

A red line curved on the co-ordinate sheet, met a previously drawn blue one. A bell tinkled, and there was silence in the room.

Breath came from between Cranston's lips in a long sigh. Curiously, he felt no elation.

He crossed the room slowly, and looked out through the glassite-covered aperture in the south wall. Just below, elevated highways were a tangled maze in the afternoon sun, and helicopters danced like a cloud of weaving midges. But Cranston neither heard nor saw them. His gaze was fixed farther away, down there where a curious cloud humped against the horizon, a cloud that was a challenging piling of vacancy; something that existed, that occupied space, yet was nothing.

Beyond it he could see the shimmering surface of New York Bay, and rising from it a tall white shaft. At the apex of that shaft a colossal

figure faced him. It was a gigantic woman of bronze, her head bowed, her hands pressed to her heavy breasts that agonized in frustration. The Universal Mother stood in eternal mourning over the visible but unseen grave of millions.

"It might be dangerous," Harold Cranston muttered. "The gases of the decomposed bodies—there was no way for them to escape. Before I start building the machine I must find out. Carl Langdon will know."

He turned away. "But first I'll draw it up It's simple enough—will take less than a week to build."

The design that presently took pictured form under Harold Cranston's flying fingers was strangely like that which 60 years ago Henry Lanson had called his B machine. But there was a difference. This one could be used from outside the Screen.

With the aid of this, by expanding the radius to include the original barrier, it would be a simple matter to destroy the hemiobloid of impenetrable force that was a city's tomb, to release the force which Lanson had set up.

* * * * *

Rand Barndon's flivver - plane settled before a graceful small structure of metal and glass. He swung his rather squat body out of the fuselage, crunched up the gravel path.

The door opened, irislike, as he stepped into the beam of the photo-ray. Somewhere inside a deep-toned gong sounded, and tiny pattering feet made running sound. "Daddy! Daddy's home!"

Blond ringlets were an aureole around tiny Rob's chubby face. The father bent to him, tossed him in the air, caught him dexterously. Ruth Barndon appeared, taller than her husband, her countenance a maturer, more feminine replica of the boy's. Rob was a warm bundle against her breasts as her lips met Rand's. "You're late, hon. Supper's been ready twenty minutes."

"I know. We were talking about what they found down there." He gestured vaguely to the south. "One of the fellows flew down last night. They wouldn't let him land. But he saw enough, hovering on the five thousand foot level, to keep him awake all night."

Ruth paled, shuddered. "What an awful thing it must have been. You know, nobody ever thought much about it. The cloud had been there all our lives and it really didn't seem to mean anything. But seeing all those buildings where people just like us once lived and worked, seeing those . . ."

"Afterward, dear." Ruth caught the signal of the man's eyes to the quietly listening child and stopped. "I'm hungry. Let's get going."

THE soft glow of artificial daylight in the Barndon livingroom is reflected cozily from its walls of iridescent metal. Rand stretches himself, yawns. "What's on tap tonight, hon?"

"We're staying home for a change."

"I thought this was Matilda's night."

"It is. But Mrs. Carter asked me to change with her, she had something on. And I would rather stay home. There's a new play by Stancourt. I think they call it 'Alone with Love.' Fred Barrymore is taking the lead."

"That gigolo! I can't see what you women find in him!"

"Rand! That's just a pose. You know darn well you turn him on every time."

"Oh all right. But let's get the magazine viewcast first. They always have something interesting." He crosses the room, touches an ornamental convolution on the wall. A panel slides noiselessly sideward, revealing a white screen. A switch clicks, the room dims, the screen glows with an inner light. Rand twirls a knob.

The wall-screen becomes half of an oval room, hung with grey draperies, grey-carpeted. There is a small table in the room, behind it show the legs and back of a chair.

Like the furniture in the Barndon's own place, table and chair are of lacquered metal, but these are grey. The drapes part, a tall man comes through. His face is long, pinched, his blond hair bristles straight up from his scalp, and his brown eyes are grave. The impact of a strong personality reaches out from the televised image, vibrant with a stagy dominance even over the miles of space intervening between actuality and reproduction.

"Oh, it's Grant Lowndes," Ruth breathes. "I love him!"

"Shhh." Barndon is intent. "Shhh."

The Radio Commission's premier reader moves with practiced grace. An adept at building up interest in trivialities by pantomimed p o r t e n t o u s n e s s, Lowndes is weaving a spell about his far-flung uadience that will assure him concentrated attention. As he sinks into the seat his eyes stare from the screen with hypnotic penetration. He places a book on the table before him. Its covers are of tooled leather, but there is a smudge of green mould across them concealing the design. He opens it.

The pages are yellow, frayed-edged. Faded handwriting is visible; minuscular. An old diary, perhaps, picked up from some dusty second-hand display.

"Good evening, friends." His voice is mellow, warming, vibrant with a peculiar tensity. Ruth's tiny, stifled gasp is a tribute to its art. "The manufacturers of General Flyers Helioplanes have honored me tonight with a great privilege and a sad task. I bring to you a voice from the past, a voice long silent, s p e e c h f r o m a throat l o n g mouldered into dust, thoughts from a brain whose very molecules are one with the snows of yesteryear. I bring to you the palpitant, living agony of the geatest catastrophe the world has ever known." His eyes drop to the volume on the lectern, and his slim, white hand presses down upon its face.

"My colleagues of the viewcast service have informed you of the rending of the veil that sixty-two years ago cut off Manhattan Island from the world. They have brought into your homes the awful vision of dead buildings; dead streets strewn with twisted skeletons. You have, I am sure, tried to picture what must have happened there in the tragic days till eternal silence fell and the entombed city had become a vast necropolis. Today, my friends, the searchers found an account of one man's experience, a painstakingly written chronicle of that time. General Flyers is sponsoring the presentation to you of this human, pitiful tale. I will quote from the diary."

CHAPTER IV

The Doom Within

MAY 9, Thursday: It is four in the morning. Aloysia came here with me from the theatre. . . . I have just returned from escorting her to the place where she resides. She does not call it home—that name she reserves for these rooms. "Home, Felix," she said, "is the place where happiness dwells." I recognized that, it is a line from one of her earlier appearances. Her mind is a blotter, seizing the thoughts, the ideas, the mental images of others and becoming impregnated with them. No. Molding itself to them. Perhaps that is the secret of her arts—dramatic and—amatory.

I am restless, uneasy. There is a peculiar feeling in the air, a vague sense of impending catastrophe. Even the recollection of the past few hours with her does not drive it away. .

I thought music might fit my mood. But the radio is out of gear. T o n i g h t nothing b u t silence. Strangely enough the police talk was roaring in. There seems to be some trouble along the waterfront. . .

It ought to be getting on to dawn, but it is still pitch dark outside. There isn't any breeze. The sky is absolutely black. I have never seen anything like it in New York. Clouds

at night always reflect the glow of the city lights. And if there are no clouds there should be stars, a moon. Can there be a storm coming down on the big city—a tornado? That would explain the way I feel.

May 10, Friday: There has been no daylight today. The only illumination is artificial. Somehow that seems the worst of what has happened to the city. For something has happened. Manhattan is surrounded by an impenetrable barrier. Nobody, nothing can get in or out. There have been no trains at Grand Central or Penn Station, the subway is operating only within the borders of Manhattan Island.

I have been driving around with Aloysia all day. In spite of the darkness things went on very much as usual in the morning, children went to school, toilers to their work. It dawned only gradually that more than half the staffs in offices and stores had not shown up. Those who do not live in Manhattan. At noon the newspapers came out with scare headlines. Every bridge out of the city is closed off by the veil of—what can I call it? Every pier. A cover has shut down over us as if Manhattan were a platter on which a planked steak was being bought from the kitchen of the Ritz-Plaza. Even the telephone and telegraph have been affected.

By three in the afternoon the whole city was in the streets. My car was forced to move at a crawl. There was no sign of fear, though. The general consensus was that the phenomenon was something thrilling, a welcome break in the humdrum of daily existence. The mayor's proclamation, in the newspapers and over the few radio stations located within the city, seemed quite superfluous. He urged the people to be calm. Whatever it was that had shut us in was only temporary, it would vanish of itself or a way would be found to get rid of it. He has appointed a committee of scientists from Columbia and the City Colleges to investigate and make plans. The best of them all, however, is unavailable. Henry Lanson. He was found crushed to death on a Hudson River pier, killed in some obscure experiment.

Aloysia left me in time for the evening performance. The theaters and movie houses are crowded—they have had the best day in their history.

At ten o'clock tonight I went to take a drink of water. None ran from the tap. I called the superintendent and he said the mains had been shut off. There was no longer any pressure. Police orders are that water is to be used only for drinking and cooking. It is being pumped from the main by fire engines stationed at the hydrants and a rationing system has been devised. I have two or three cases of Perrier—they should be sufficient for my needs till this thing is over. There is plenty of wine and Scotch, but I have no desire for alcohol.

MAY 11, Saturday: The darkness still continues. No milk was delivered this morning. Prices for food have begun to go up. There is very little fresh meat to be had, practically no vegetables or fruits. Evaporated milk is being sold at a dollar a can. I am afraid the children are going to suffer a great deal.

May 12, Sunday: Church was packed. There have been several riots in the poorer sections of the city. Grocery stores were raided, a warehouse gutted. The militia has been called out, and all stocks of food taken over by the authorities for rationing.

Aloysia has just appeared, bag and baggage. She says she feels safe only here. I am going out to see what is going on.

Two p. m.: There is no longer any water in the system! The lakes in Central Park are being emptied, the fluid taken to breweries and distilleries nearby, where the water is being filtered and chlorinated. The little thus obtained, and canned fruit juices, furnish the only drink for children. Adults are drinking beer and wine.

My car was stopped by a detail of national guardsmen in uniform. No gasoline engines are to be run any

longer. There is no escape for the carbon monoxide fumes being generated, and they are poisoning the atmosphere. There already have been several deaths from this cause.

A fire started in an apartment house on Third Avenue. It was extinguished by chemicals. I wonder how long that will be efficacious?

I thought I was fairly well stocked up for at least a week. But with Aloysia here, her maid and my own man, my stock of food and drinkables is rapidly disappearing. For the first time I have sent Jarvis out to the food depots, with an affidavit setting forth the size of my "family," my residence, etc. I understand that each adult is being allotted one can of meat or vegetables, and one pint of water, per day.

Three p. m.: All house lights have been turned off to conserve coal. I am writing by candle. Street lighting is still maintained. There has been no gas since the Darkness fell, the plant being in Astoria. As my own kitchen has an electric range this did not impress me, but I understand those not so taken care of had been displaying remarkable ingenuity. Several families had upended electric laundry irons and used those as grills. That is ended now. However, there is so little to cook that the lack of heat hardly brings added hardship.

Jarvis has not yet returned.

Midnight: From my window I can overlook quite a large portion of the city. A vast black pall rests over us, relieved only by the network of glowing lamps outlining the streets. Even these seem to be growing dimmer.

My valet, Jarvis, is still among the missing. He has been with me for ten years, I thought him loyal, honest. He *was* honest with respect to money. I have trusted him with large sums and never found him faithless. But money is worth nothing today, while food . . .

Stress reveals the inner nature of the human animal. I met the Harrison-Smiths today, walking along Park Avenue in the foreboding restlessness that is keeping all New York on the sidewalks. The usually iron-visaged banker presented a countenance whose color matched the clammy hue of a dead fish's belly. His heavy jowls were dewlaps quivering with fear. Even while we talked his eyes clung to his wife, who was erect, a bright white flame in the Darkness. Her eyes were answering the appeal in his. She had strength enough for both, and was keeping him from collapse by sheer, silent will. The gossips, this winter, were buzzing about Anita and Ted Van Norden, the wastrel who reminds me so much of my own youth. There could not have been any truth in the rumors.

May 13, Monday: Noon, I went out at five this morning to take my place in the long line at the food station. I have just returned with my booty. One can of sardines and a six-ounce bottle of soda—to maintain three adults twenty-four hours! On my way back I saw a man, well-dressed, chasing an alley cat. He caught it, killed it with a blow of his fist, and stuffed it in a pocket.

The air is foul with stench. A white hearse passed me, being pushed by men on foot. Someone told me that Central Park is being used as a burying ground.

I STOPPED to watch the passing hearse near a National Guardsman, a slim young chap whose uniform did not fit him very well. He spoke to me. "That's the worst of this thing, sir, what it's doing to children." Under his helmet his eyes were pits of somber fire. "Just think of the babies without milk. The canned stuff gave out today. My own kid is sick in bed, he can't stand the junk we've been giving him. June—that's my wife—is clean frantic."

I wanted to comfort him, but what was there to say? "How old is your youngster?" I asked.

"Junior is two. And a swell brat! You ought to hear him talk a mile a minute. He's going to be a lawyer when he grows up."

I listened to him for a while, then made some excuse and got away. I had to or he would have seen that my eyes were wet.

Later: Aloysia has slept all day. All the windows in the apartment are

open, but the air is heavy, stifling. It is difficult to move, to breathe. The shell that encloses us is immense, but eventually the oxygen in the enclosed air must be used up. Then what?

Unless relief comes soon death will be beforehand, the mass death of all the teeming population of this island. One must face that. Just what form will it take? Starvation, thirst, asphyxiation? Queer. I, who have so often babbled of the futility of life, do not want to die. It is—unpleasant—to contemplate utter extinction, the absolute end of self. I wish I believed in immortality—in some sort of future life. Even to burn eternally in hell would be better than simply—*to stop.*

There is a red glow to the south. Is it a thinning of the Darkness?

The city seems hushed with all traffic noise stopped. But another sound has replaced it. A high-pitched murmur, not loud, but omnipresent, insistent. I have just realized what it is. Children crying. Thousands of them, hundreds of thousands. Hungry children—thirsty children. . . .

May 14, Tuesday: The clock says it is morning. It is not dark outside any more. A red light suffuses the scene, the light of the gigantic flame that has enveloped all the lower end of the Island. There is no wind. The conflagration is spreading very slowly, but it is coming inexorably. Overhead are vast rolling billows of smoke, edged with scarlet glare. Below there is a turbulent sea of human beings. The roar of the fire, pent-in and reverberant, mingles with the crash of breaking glass, the rattle of rifle shots, a growling animal-like sound that is the voice of the mob. They are engaged in a carnival of destruction, a blind, mad venting of protest against the doom that has overtaken them. I had a dog once that was run over by some fool in a truck. When I went to pick it up it snarled and sank its teeth in my hand. That is like those people down there. They do not know what has hurt them, but they must hurt someone in return.

Where they find the strength to fight I do not know. I can scarcely move. My tongue fills my mouth. It is almost impossible to breathe.

Aloysia has just called me. It was the ghost of a word, her "Felix." In a moment I shall go in to her and lie down beside her.

* * * * *

GRANT LOWNDES looks up from the book.

"That is all," he says simply. "In an inner room of the apartment where this was found the searchers discovered two skeletons on the mouldering ruin of a bed, a man's and a woman's.

"General Flyers bids you good night. I shall be with you again at this same hour on Friday."

He turns and goes slowly out through the grey curtains. The diary remains on the little grey table. Shadows close in from the edges of the screen, concentrating light within their contracting circle. The book is the last thing visible. That, too, is gone. . .

There is silence in the living-room for a long minute. Rand Barndon reaches to the radiovisor switch, clicks it off. The screen is blankly white in the glow of the room light.

"You know," Barndon says slowly. "The city wasn't all burned up. Guess the fire burned up all the oxygen and put itself out. That was what killed the people too."

Ruth sighs tremulously. "Rand, I was thinking about that one thing he said, about that soldier that was worried about his sick little boy. Just think if anything like that were to happen to our Rob."

"Say, I noticed that too. The fellow had a good idea. That's what we're going to make of the kid, a lawyer. Big money and not too much hard work. We'll send him to Dartmouth first, and then to Harvard. A fellow was telling me they've got the best law school in the country. ."

Next Issue: BRAIN OF VENUS
A Novelette of Universal Catastrophe, by JOHN RUSSELL FEARN

THE BRINK OF

The Last Story Ever Written by

STANLEY G. WEINBAUM

Author of "The Circle of Zero," "The Worlds of If," etc.

ONE would hardly choose the life of an assistant professor of mathematics at an Eastern University as an adventurous one. Professors in general are reputed to drone out a quiet, scholarly existence, and an instructor of mathematics might seem the driest and least lively of men, since his subject is perhaps the most desiccated. And yet—even the lifeless science of figures has had its dreamers — Clerk-Maxwell, Lobachewski, Einstein and the rest. The latter, the great Albert Einstein himself who is forging the only chain that ever tied a philosopher's dream to experimental science, is pounding his links of tenuous mathematical symbols, shadowy as thought, but unbreakable.

And don't forget that "Alice in Wonderland" was written by a dreamer who happened also to be a mathematician. Not that I class myself with them; I'm practical enough to leave fantasies alone. Teaching is my business.

At least, teaching is my main business. I do a little statistical work for industrial corporations when the occasion presents itself—in fact, you'll find my name in the classified section: Abner Aarons, Statistician and Consulting Mathematician. I eke out my professional salary, and I do at times strike something interesting. Of course, in the main such work consists of graphing trends of consumption for manufacturers, or population increases for public utilities.

And occasionally some up-and-coming advertising agency will consult me on how many sardine cans would be needed to fill the Panama Canal, or some such material to use as catchy advertising copy. Not exactly exciting work, but it helps financially.

Thus I was not particularly sur-

Fantastic Figures, in a Myriad Swarm, Connive

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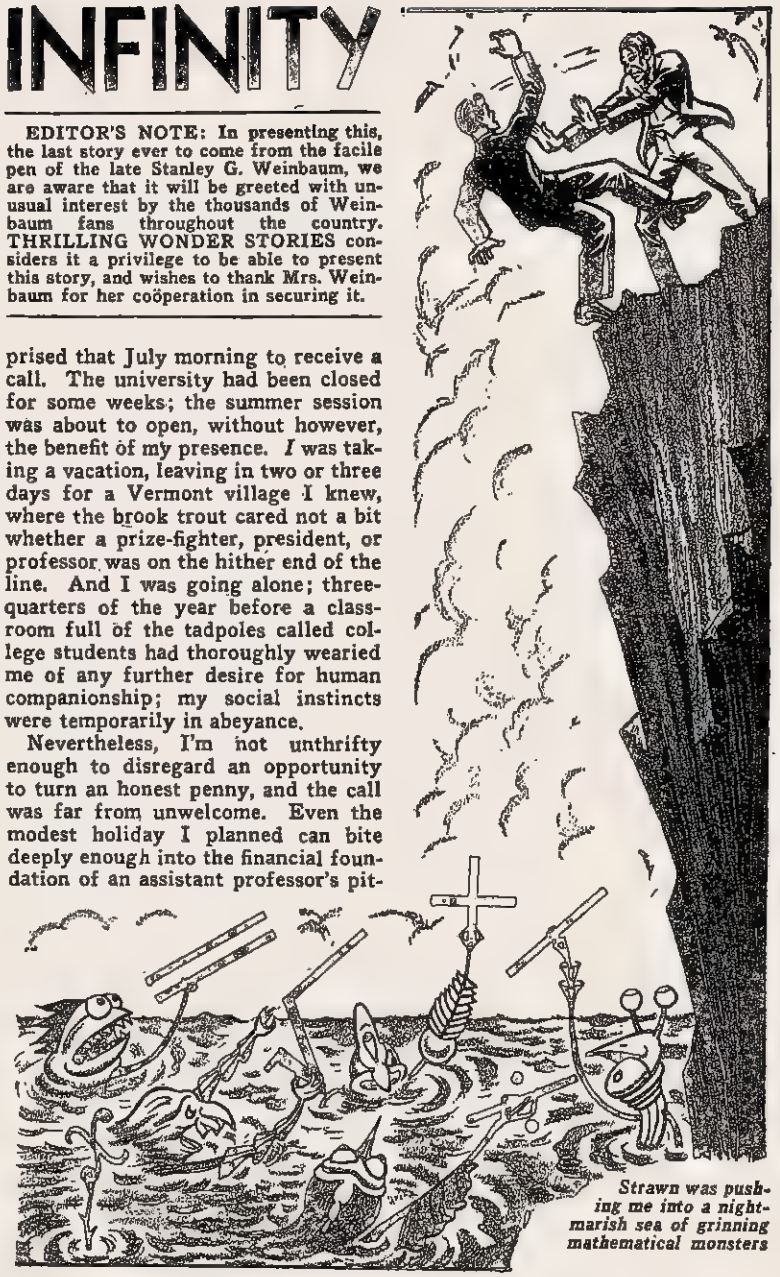
Thus I was not particularly surprised that July morning to receive a call. The university had been closed for some weeks; the summer session was about to open, without however, the benefit of my presence. *I* was taking a vacation, leaving in two or three days for a Vermont village I knew, where the brook trout cared not a bit whether a prize-fighter, president, or professor was on the hither end of the line. And I was going alone; three-quarters of the year before a classroom full of the tadpoles called college students had thoroughly wearied me of any further desire for human companionship; my social instincts were temporarily in abeyance.

Nevertheless, I'm not unthrifty enough to disregard an opportunity to turn an honest penny, and the call was far from unwelcome. Even the modest holiday I planned can bite deeply enough into the financial foundation of an assistant professor's pit-



Strawn was pushing me into a nightmarish sea of grinning mathematical monsters

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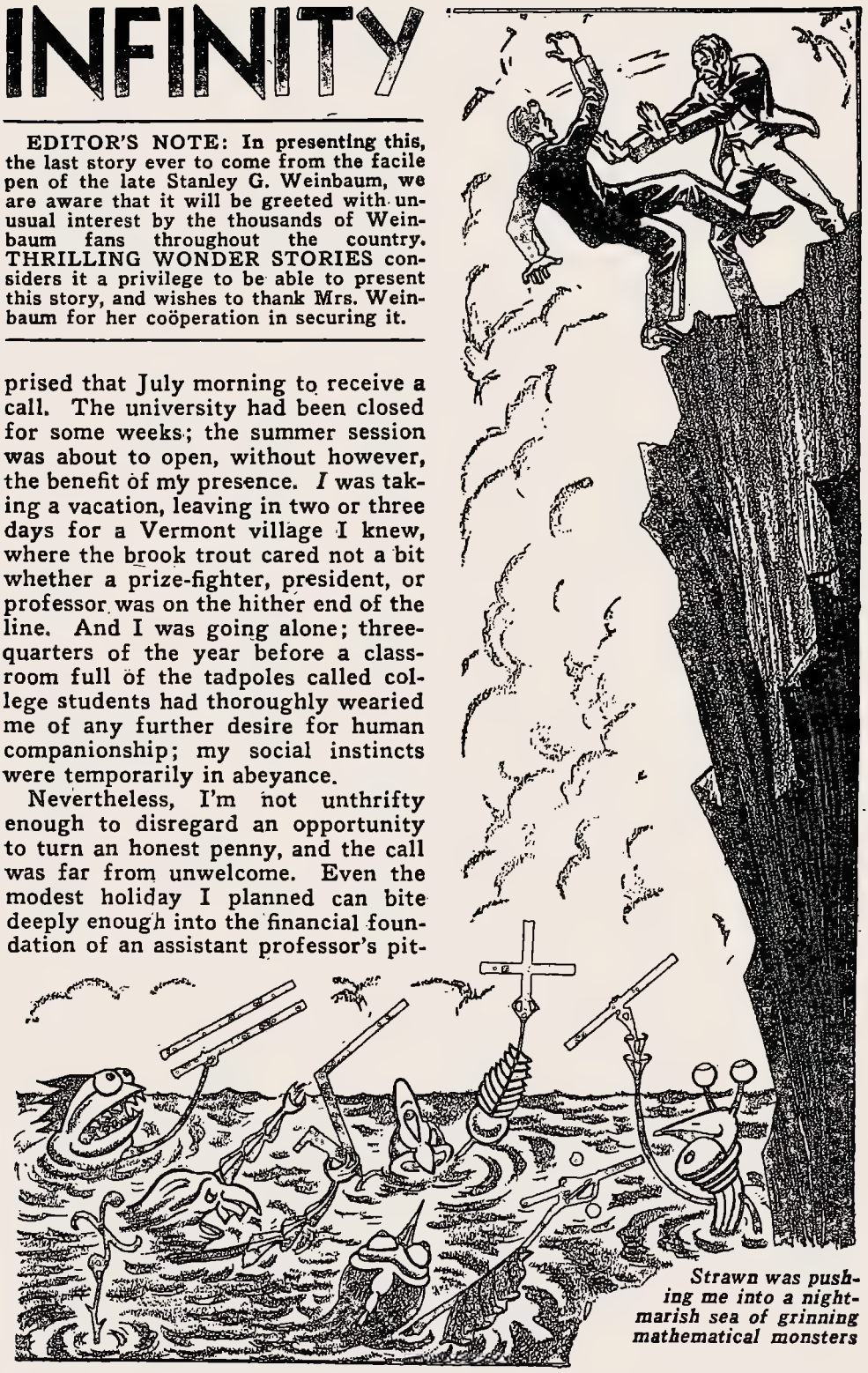


Strawn was pushing me into a nightmarish sea of grinning mathematical monsters

with the Haunting Specter of Death

tance. And the work sounded like one of these fairly lucrative and rather simple propositions.

"This is Court Strawn," the telephone announced. "I'm an experimental chemist, and I've completed a rather long series of experiments. I want them tabulated and the results analyzed; do you do that sort of work?"

I did, and acknowledged as much.

"It will be necessary for you to call here for your data," the voice continued. Strangely unctuous, that voice. "It is impossible for me to leave." There followed an address on West Seventieth Street.

WELL, I called for data before. Generally the stuff was delivered or mailed to me, but his request wasn't extraordinary. I agreed, and added that I'd be over shortly. No use delaying my vacation if I could help it.

I took the subway. Taxis are a needless luxury to a professor, and a car of my own was an unrealized ambition. It wasn't long before I entered one of the nondescript brown houses that still survive west of the Avenue. Strawn let me in, and I perceived the reason for his request. The man was horribly crippled; his whole left side was warped like a gnarled oak, and he was hard put to hobble about the house. For the rest—stringy dark hair, and little tense eyes.

He greeted me pleasantly enough, and I entered a small library, while my host hobbled over to a littered desk, seating himself facing me. The deep-set eyes looked me over, and he chuckled.

"Are you a good mathematician, Dr. Aarons?" he asked. There was more than a hint of a sneer in his voice.

"My work has been satisfactory," I answered, somewhat nettled. "I've been doing statistical work for several years."

He waved a shriveled left hand.

"Of course—of course! I don't doubt your practical ability. Are you, however, well versed in the more abstract branches—the theory of numbers, for instance, or the hyper-spatial mathematics?"

I was feeling rather irritated. There was something about the man—

"I don't see that any of this is necessary in statistical analysis of experimental results," I said. "If you'll give me your data, I'll be going."

He chuckled again, seeming hugely amused.

"As a matter of fact, Dr. Aarons," he said smirking," the experiment isn't completed yet. Indeed, to tell the truth, it is just beginning."

"What!" I was really angry. "If this is your idea of a joke—" I started to rise, thoroughly aroused.

"Just a moment," said Strawn coolly. He leveled a very effective-looking blue-barreled automatic at me. I sat down again open-mouthed; I confess to a feeling of panic at the sight of the cripple's beady little eyes peering along the ugly weapon.

"Common politeness dictates that you at least hear me out, Dr. Aarons." I didn't like the oily smoothness of his voice, but what was I to do? "As I was saying, the experiment is just beginning. As a matter of fact, *you* are the experiment!"

"Eh?" I said, wondering again if the whole thing might not be a joke of some sort.

"You're a mathematician, aren't you?" Strawn continued. "Well, that makes you fair game for me. A mathematician, my good friend, is no more to me than something to be hunted down. And I'm doing it!"

The man was crazy! The realization dawned on me as I strove to hold myself calm. Best to reason with him, I thought.

"But why?" I asked. "We're a harmless lot."

His eyes blazed up with a fierce light.

"Harmless, eh, harmless! Well, it was one of your colleagues that did—this!" He indicated his withered leg with his withered arm. "He did this with his lying calculations!" He leaned forward confidentially. "Listen to me, Dr. Aarons. I am a chemist, or was once. I used to work with explosives, and was pretty good, too.

And then one of you damned calculators figured out a formula for me! A misplaced decimal point—bah! You're all fair game to me!" He paused, and the sneer came back to his lips. "That's simple justice, now, isn't it?"

Well, you can imagine how thoroughly horrified I was, sitting there facing a homicidal maniac with a loaded gun in his hand. Humor him! I'd heard that was the best treatment. Use persuasion, reason!

"Now, Mr. Strawn," I said, "you're certainly entitled to justice. Yes, you certainly are! But surely, Mr. Strawn, you are not serving the ends of justice by venting your anger on me! Surely that isn't justice."

HE laughed wildly and continued. "A very spacious argument, Dr. Aarons. You are simply unfortunate in that your name is the first in the classified section of the directory. Had your colleague given me a chance—any slightest chance to save my body from this that you see, I might be forgiving. But I trusted that fool's calculations!" He twisted his face again into that bitter leer. "As it is, I am giving you far more of a chance than I had. If, as you claim, you are a good mathematician, you shall have your opportunity to escape. I have no quarrel with the real students of figures, but *only*"—his leer became a very sinister scowl—"only with the dullards, the fakes and the blunderers. Yes, you'll have your chance!" The grin returned to his lips, but his eyes behind the blue automatic never wavered.

I saw no other alternative but to continue the ghastly farce. Certainly open opposition to any of his suggestions might only inflame the maniac to violence, so I merely questioned. "And what is the proposition, Mr. Strawn?"

The scowl became a sneer again.

"A very fair one, sir. A very fair proposition, indeed." He chuckled.

"I should like to hear it," I said, hoping for an interruption of some sort.

"You shall. It is just this: You are a mathematician, and you say, a good one. Very well. We shall put your claim to the test. I am thinking of a mathematical quantity, a numerical expression, if you prefer. You have ten questions to discover it. If you do so you are free as far as I am concerned. But if you fail"—his scowl reappeared—"well, if you fail I shall recognize you as one of the tribe of blunderers against whom I war, and the outcome will not be pleasant!"

Well! It was several moments before I found my voice, and began to babble protests. "But, Mr. Strawn! That's an utter impossibility! The range of numbers is infinite; how can I identify one with ten questions? Give me a fair test, man! This one offers not a chance in a million! In a billion!"

He silenced me with a wave of the blue barrel of his weapon.

"Remember, Dr. Aarons, I did not say it was a number. I said a numerical expression, which is a vastly wider field. I am giving you this hint without deducting a question; you must appreciate my magnanimity!" He laughed. "The rules of our little game are as follows: You may ask me any questions except the direct question, 'What is the expression?' I am bound to answer you in full and to the best of my knowledge any question except the direct inquiry. You may ask me as many questions at a time as you wish up to your limit of ten, but in any event I will answer not less than two per day. That should give you sufficient time for reflection"—again that horrible chuckle—"and my time too is limited."

"But, Mr. Strawn," I argued, "that may keep me here five days. Don't you know that by tomorrow my wife will have the police searching for me?"

A glint of anger flashed in the mad eyes. "You are not being fair, Dr. Aarons! I know you are not married! I checked up on you before you came here. I know you will not be missed. Do not attempt to lie to me; rather help me serve the ends of justice! You should be more than willing to prove your worth to survive as one of the true mathematicians." He rose sud-

denly. "And now, sir, you will please precede me through the door and up those stairs!"

Nothing to do but obey! The stubby gun in his hand was enough authority, at least to an unadventurous soul like myself. I rose and stalked out of the room at his direction, up the stairs and through a door he indicated. Beyond was a windowless little cell ventilated by a skylight, and the first glance revealed that this was barred. A piece of furniture of the type known as day-bed, a straight chair, a deep overstuffed chair, and a desk made up the furnishings.

"Here," said the self-appointed host, "is your student's cell. On the desk is a carafe of water, and, as you see, an unabridged dictionary. That is the only reference allowed in our little game." He glanced at his watch. "It is ten minutes to four. By four tomorrow you must have asked me two questions. Two questions, and have them well thought out! The ten minutes over are a gift from me, lest you doubt my generosity!" He moved toward the door. "I will see that your meals are on time," he added. "My best wishes, Dr. Aarons."

THE door clicked shut and I at once commenced a survey of the room. The skylight was hopeless, and the door even more so; I was securely and ingloriously imprisoned. I spent perhaps half an hour in painstaking and fruitless inspection, but the room had been well designed or adapted to its purpose; the massive door was barred on the outside, the skylight was guarded by a heavy iron grating, and the walls offered no slightest hope. Abner Aarons was most certainly a prisoner!

My mind turned to Strawn's insane game. Perhaps I could solve his mad mystery; at the least, I could keep him from violence for five days, and something might occur in the interim. I found cigars on the desk, and, forcing myself to a degree of calm, I lit one and sat down to think.

Certainly there was no use in getting at his lunatic concept from a quantitative angle. I could waste all ten questions too easily by asking, "Is it greater or less than a million? Is it greater or less than a thousand? Is it greater or less than a hundred?" Impossible to pin the thing by that sort of elimination when it might be a negative number, a fraction or a decimal, or even an imaginary number like the square root of minus one—or, for that matter, any possible combination of these. And that reflection gave me my impulse for the first question; by the time my cigar had been consumed to a tattered stub I had formulated my initial inquiry. Nor had I very long to wait; it was just past six when the door opened.

"Stand away from the door, Dr. Aarons," came the voice of my host. I complied perforce; the madman entered, pushing before him a tea caddy bearing a really respectable meal, complete from bouillon to a bottle of wine. He propelled the cart with his withered left hand; the right brandished the evil automatic.

"I trust you have used your time well," he sneered.

"At least I have my first question," I responded.

"Good, Dr. Aarons! Very good! Let us hear it."

"Well," I continued, "among numbers, expressions of quantity, mathematicians recognize two broad distinctions—two fields in which every possible numerical expression may be classified. These two classifications are known as real numbers on the one hand, including every number both positive and negative, all fractions, decimals, and multiples of these numbers, and on the other hand the class of imaginary numbers, which include all products of operations on the quantity called 'e,' otherwise expressed as the square root of minus one."

"Of course, Dr. Aarons. That is elementary!"

"Now then—is this quantity of yours real or imaginary?"

He beamed with a sinister satisfaction.

"A very fair question, sir! Very fair! And the answer—may it assist you—is that it is either!"

A light seemed to burst in my brain! And student of numbers knows that only one figure is both real and imaginary, the one that marks the point of intersection between the real and imaginary numbergraphs. "I've got it!" The phrase kept running through my mind like a crazy drumbeat! With an effort I kept an appearance of calm.

"Mr. Strawn," I said, "is the quantity you have in mind zero?"

He laughed—a nasty, superior laugh that rasped in my ears.

"It is not, Dr. Aarons! I know as well as you that zero is both a real and imaginary number! Let me call your attention to my answer: I did not say that my concept was *both* real and imaginary; I said it was either!" He was backing toward the door. "Let me further remind you that you have eight guesses remaining, since I am forced to consider this premature shot in the dark as one chance! Good evening!"

He was gone; I heard the bar outside the door settle into its socket with a thump. I stood in the throes of despair, and cast scarcely a glance at the rather sumptuous repast he had served me, but slumped back into my chair.

It seemed hours before my thoughts were coherent again; actually I never knew the interval, since I did not glance at my watch. However, sooner or later I recovered enough to pour a tumbler of wine and eat a bite of the roast beef; the bouillon was hopelessly cold. And then I settled down to the consideration of my third question.

FROM Strawn's several hints in the wording of his terms and the answers to my first and second queries, I tabulated what information I could glean. He had specifically designated a numerical expression; that eliminated the x's and y's of algebraic usage. The quantity was either real or imaginary and was not zero; well, the square of any imaginary is a real number. If the quantity contained more than one figure, or if an exponent was used, then I felt sure his expression was merely the square of an imaginary; one *could* consider such a quantity either real or imaginary. A means of determining this by a single question occurred to me. I scribbled a few symbols on a sheet of paper, and then, feeling a sudden and thorough exhaustion, I threw myself on the daybed and slept. I dreamed Strawn was pushing me into a nightmarish sea of grinning mathematical monsters.

The creaking of the door aroused me. Sunbeams illumined the skylight; I had slept out the night. Strawn entered balancing a tray on his left arm, holding the ever-present weapon in his free hand. He placed a half dozen covered dishes on the tea-cart, removing the remains of the evening meal to his tray.

"A poor appetite, Dr. Aarons," he commented. "You should not permit your anxiety to serve the ends of justice to upset you!" He chuckled with enjoyment of his sarcasm. "No questions yet? No matter; you have until four tomorrow for your next two."

"I have a question," I said, more thoroughly awakened. I rose and spread the sheet of paper on the desk.

"A numerical quantity, Mr. Strawn, can be expressed as an operation on numbers. Thus, instead of writing the numeral '4' one may prefer to express it as a product, such as '2 x 2,' or as a sum, as '3 + 1,' or as a quotient, as '8 ÷ 2' or $\frac{8}{2}$ or as a remainder, as '5 – 1.' Or even in other ways—as a square, such as 2^2, or as a root, such as $\sqrt{16}$ or $\sqrt[3]{64}$. All different methods of expressing the single quantity '4.' Now here I have written out the various mathematical symbols of operations; my question is this: Which if any of these symbols is used in the expression you have in mind?"

"Very neatly put, Dr. Aarons! You have succeeded in combining several questions in one." He took the paper from me, spreading it on the desk before him. "This symbol, sir, is the one used." He indicated the first one in my list—the subtraction sign, a simple dash!

And my hopes, to use the triviality

of a pun, were dashed as well! For that sign eliminated my carefully thought-out theory of a product or square of imaginaries to form a real number. You can't change imaginary to real by addition or subtraction; it takes multiplication, squaring or division to perform that mathematical magic! Once more I was thoroughly at sea, and for a long time I was unable to marshal my thoughts.

And so the hours dragged into days with the tantalizing slow swiftness that tortures the condemned in a prison death house. I seemed checkmated at every turn; curious paradoxical answers defeated my questions.

My fourth query, "Are there any imaginaries in your quantity?" elicited a cool, definite "No." My fifth, "How many digits are used in this expression?" brought forth an equally definite "Two."

Now there you are! What two digits connected by a minus sign can you name whose remainder is either real and imaginary? "An impossibility," I thought. "This maniac's merely torturing me!" And yet — somehow, Strawn's madness seemed too ingenious, too clever, for such an answer. He was sincere in his perverted search for justice. I'd have sworn to that.

On my sixth question, I had an inspiration! By the terms of our game, Strawn was to answer any question save the direct one, "What is this expression?" I saw a way out! On his next appearance I met him with feverish excitement, barely waiting for his entrance to begin my query.

"Mr. Strawn! Here is a question you are bound by your own rules to answer. Suppose we place an equal sign after your quantity, what number or numbers will complete the equation: *What is the quantity equal to?*"

WHY was the fiend laughing? Could he squirm out of that poser?

"Very clever, Dr. Aarons. A very clever question. And the answer is—anything!"

I suppose I shouted. "Anything! Anything! Then you're a fraud, and your game's a damnable trickery. There's no such expression!"

"But there is, Doctor! A *good* mathematician could find it!" And he departed, still laughing.

I spent a sleepless night. Hour after hour I sat at that hateful desk, checking my scraps of information, thinking, trying to remember fragments of all-but-forgotten theories. And I found solutions! Not one, but several. Lord, how I sweated over them! With four questions—two days—left to me, the solution of the problem began to loom very close. The things dinned in my brain; my judgment counseled me to proceed slowly, to check my progress with another question, but my nature was rebelling against the incessant strain. "Stake it all on your last four questions! Ask them all at once, and end this agony one way or the other!"

I thought I saw the answer. Oh, the fiendish, insane cleverness of the man! He had pointed to the minus sign on my list, deliberately misled me, for all the time the symbol had meant the bar of a fraction. Do you see? The two symbols are identical—just a simple dash—but one use means subtraction and the other division! "1 — 1" means zero, but "1/1" means one! And by division his problem could be solved. For there is a quantity that means literally anything, real number or imaginary, and that quantity is "0/0"! Yes, zero divided by zero. You'd think offhand that the answer'd be zero, or perhaps one, but it isn't, not necessarily. Look at it like this: take the equation "2 x 3 = 6". See? That's another way of saying that two goes into six three times. Now take "0 x 6 = 0." Perfectly correct, isn't it? Well, in that equation *zero goes into zero six times!* Or "0/0 = 6"! And so on for any number, real or imaginary—zero divided by zero equals anything!

And that's what I figured the fiend had done. Pointed to the minus sign when he meant the bar of a fraction, or division!

He came in grinning at dawn.

"Are your questions ready, Dr.

Aarons? I believe you have four remaining."

I looked at him. "Mr. Strawn, is your concept zero divided by zero?"

He grinned. "No, sir, it is not!"

I wasn't disheartened. There was just one other symbol I had been thinking of that would meet the requirement—one other possibility. My eighth question followed. "Then is it infinity divided by infinity?"

The grin widened. "It is not, Dr. Aarons."

I was a little panicky then! The end loomed awfully near! There was one way to find out if the thing was fraudulent or not; I used my ninth question:

"Mr. Strawn, when you designated the dash as the mathematical symbol used in your expression, did you mean it as the bar of a fraction or as the sign of subtraction?"

"As the subtraction sign, Dr. Aarons. You have one more question. Will you wait until tomorrow to ask it?"

The fiend was grinning in huge enjoyment. Thoroughly confident, he was, in the intricacies of his insane game. I hesitated in a torture of frenzied indecision. The appalling prospect of another agonized night of doubts decided me.

"I'll ask it now, Mr. Strawn!"

It *had* to be right! There weren't any other possibilities; I'd exhausted all of them in hour after hour of miserable conjecture!

"Is the expression—the one you're thinking of—infinity minus infinity?"

It was! I knew it by the madman's glare of amazed disappointment.

"The devil must have told you!" he shrieked. I think there were flecks of froth on his lips. He lowered the gun in his hand as I edged toward the door; he made no move to stop me, but stood in a sort of desolate silence until I gained the top of the stairway. Then—

"Wait a minute!" he screamed. "You'll tell them! Wait just a minute, Dr. Aarons!"

I was down the stairs in two leaps, and tugging at the door. Strawn came after me, his gun leveled. I heard it crash as the door opened and I slipped out into a welcome daylight.

Yes, I reported him. The police got him as he was slipping away and dragged him before an alienist. Crazy, but his story was true; he *had* been mangled in an experimental laboratory explosion.

OH, the problem? Don't you see? Infinity is the greatest expression of number possible—a number greater than any conceivable. Figure it out like this:

The mathematician's symbol for infinity is a tipsy eight—so: ∞.

Well, take the question, $\infty+6=\infty$. That's true, because you can't add anything to infinity that will make it any greater than it is. See? It's the greatest possible number already. Well then, just by transposition, $\infty-\infty=6$. And so on; the same system applies to any conceivable number, real or imaginary.

There you are! Infinity minus itself may equal any quantity, absolutely *any* number, real or imaginary, from zero to infinity. No, there was nothing wrong with Court Strawn's mathematics.

WHEN EVOLUTION STOPS!

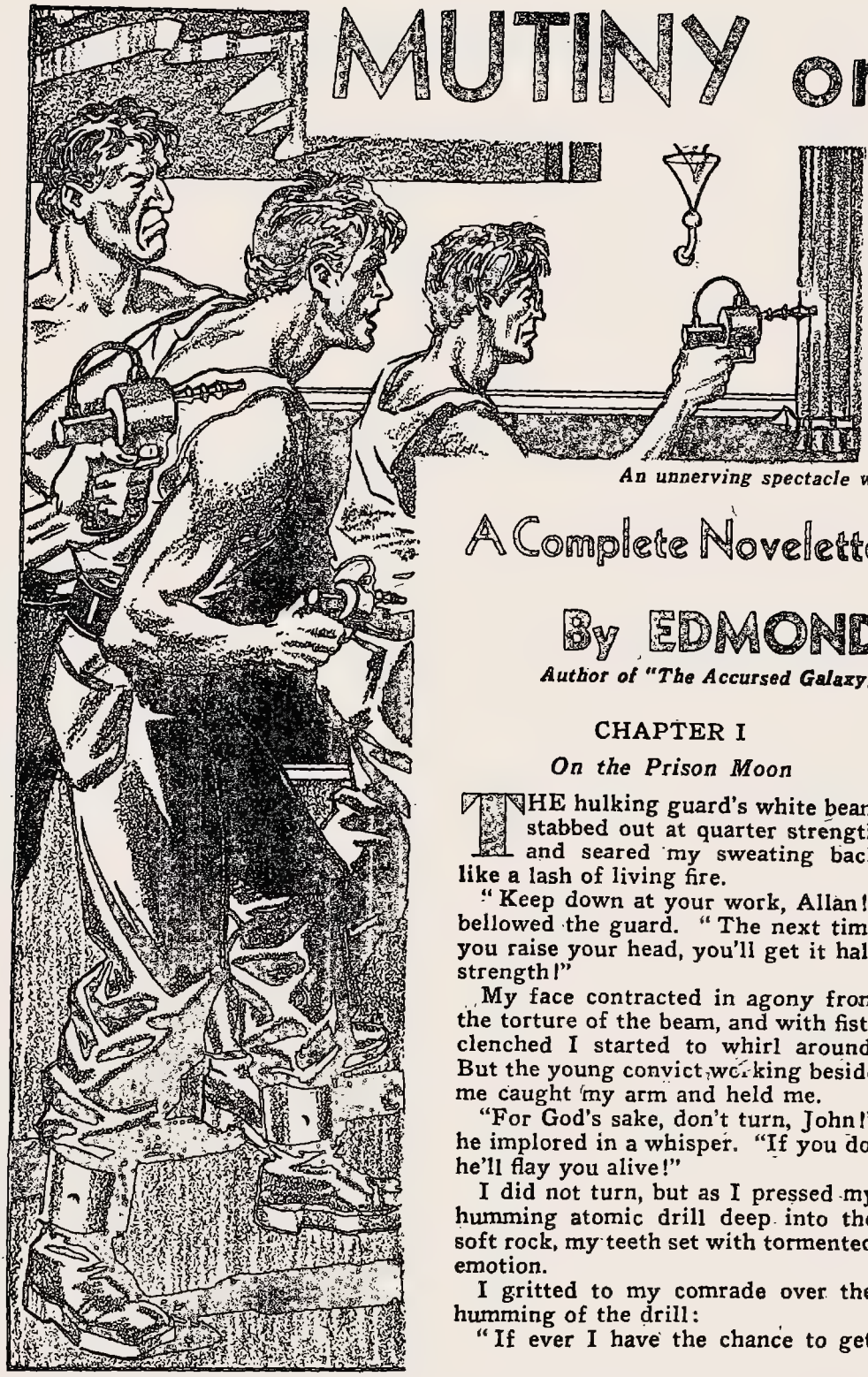
The Earth is Plunged into a Mist in

BLACK FOG

By DONALD WANDREI

—in the Next Issue!

MUTINY on



An unnerving spectacle we

A Complete Novelette

By EDMOND

Author of "The Accursed Galaxy,"

CHAPTER I

On the Prison Moon

THE hulking guard's white beam stabbed out at quarter strength and seared my sweating back like a lash of living fire.

"Keep down at your work, Allan!" bellowed the guard. "The next time you raise your head, you'll get it half strength!"

My face contracted in agony from the torture of the beam, and with fists clenched I started to whirl around. But the young convict working beside me caught my arm and held me.

"For God's sake, don't turn, John!" he implored in a whisper. "If you do, he'll flay you alive!"

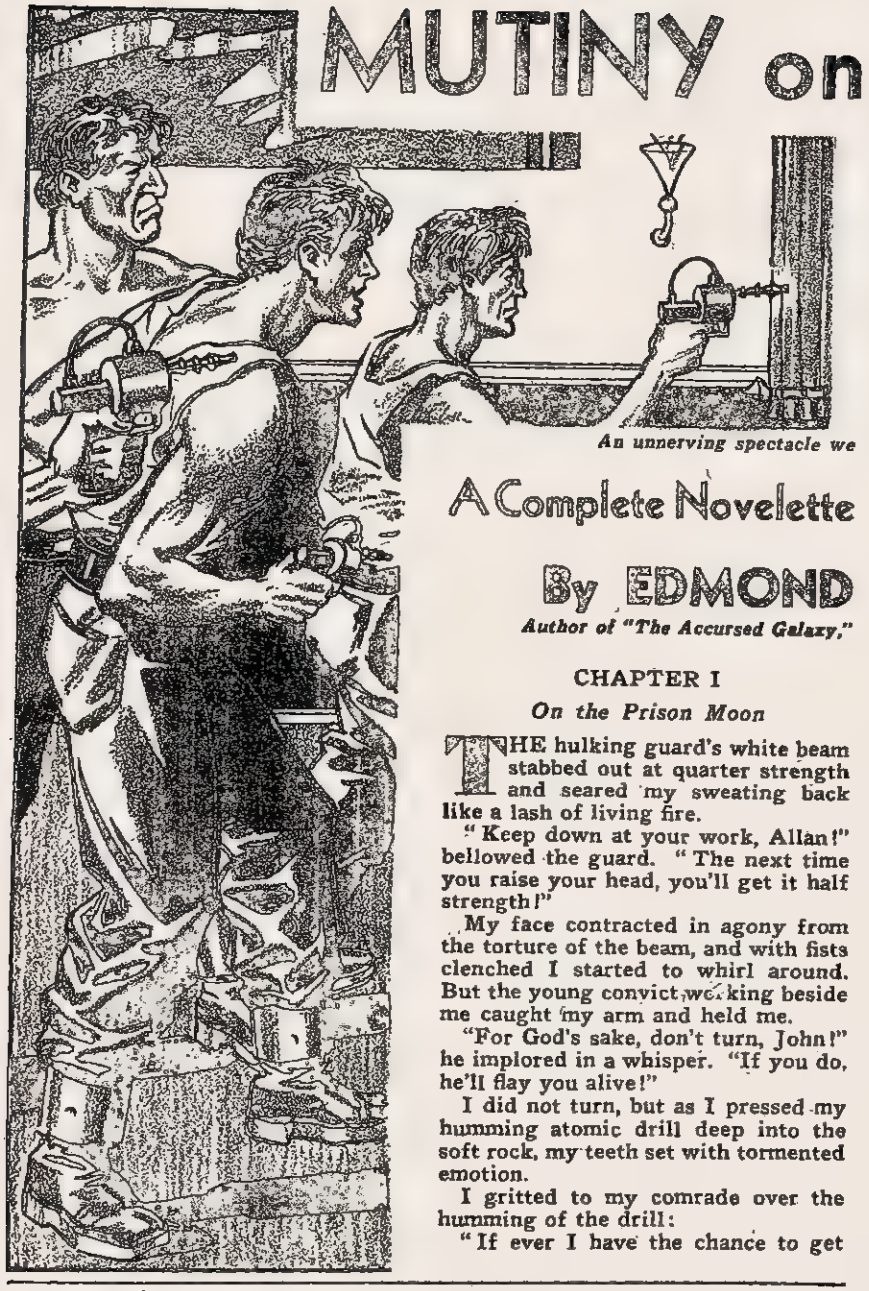
I did not turn, but as I pressed my humming atomic drill deep into the soft rock, my teeth set with tormented emotion.

I gritted to my comrade over the humming of the drill:

"If ever I have the chance to get

Revolt on a Satellite Turns to Splendid Siege

MUTINY on EUROPA



An unnerving spectacle we must have been to them!

A Complete Novelette of Earthmen in Bondage

By EDMOND HAMILTON

Author of "The Accursed Galaxy," "Cosmic Quest," etc.

CHAPTER I

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"If ever I have the chance to get my hands around that guard's neck, he is going to die—slowly."

Steve Senn, my slightly built, bespectacled young fellow convict, made no answer, lifting a heavy chunk of white rock. We two, wearing the regulation grey convict clothes, were working in a shallow pit in the rock. While I loosened the rock with my drill, my companion piled it up. Around us scores of other convicts also were drilling, hammering, chipping. Guards in black, armed with atomic beam-pistols, watched us vigilantly as we worked.

In the dull green sky the sun, a very small and feeble sun, was sinking westward. Over the eastern horizon bulked a colossal, cloudy white globe. It was Jupiter, the monster, molten planet of which this world, Europa, was a satellite. This was the farthest outpost of the pioneering Earthmen, this wild, jungle-covered moon on which they had planted this little prison colony to which were sentenced

Revolt on a Satellite Turns to Splendid Siege as the Europan Horde Storms the Gates!

EUROPA

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of Earthmen in Bondage

HAMILTON

"Cosmic Quest," etc.

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the most desperate criminals of Earth and its other colonies.

Around the cleared space of the colony, with its metal buildings and barracks, rose towering, steaming fern-jungles, inhabited only by the big, soft-bodied, semi-intelligent bipeds called the Europans. The air that drifted from those miasmic jungles was so damp and hot it choked us as we toiled, and with it came vicious, stinging insects that settled on our perspiring hands and faces.

"It's worse today than usual," panted Steve Senn. "They'll kill us all if they don't give us a rest."

"That's what they want to do, kill us," I grated. "Not that I'd mind dying, after six months of this, if I could do one thing before I die."

"You're still thinking of the man you told me about—Carse Lasser?" Steve asked.

I nodded, my hands tightening convulsively on the handle of my humming drill. "All I ask of life is a chance to kill him. Then I wouldn't care what happened."

THAT red flame of anger and hate rose in my brain again as I spoke. "Six months ago, Captain John Allan of the Earth Colonial Service, commanding a post on South Venus. Now, Convict John Allan, sentenced to Europa for life for treachery to the Service. And all Carse Lasser's work!" My teeth gritted together. "God, if I'd only known that Lasser, my subordinate, was playing the traitor, selling weapons to the Venusians! But I didn't dream of it until Lasser suddenly accused *me* of having done it! And backed up his accusation with the perjured testimony he bought, that convicted me and sent me here—"

"Quiet, John," tensely begged Steve Senn as my voice rose. "More than one of us here were sentenced unjustly."

He added, "Better push on that drill. I hear guards coming this way."

As we bent to our toil in the suffocating pit in the rock, we could hear voices of an approaching party passing through the convict workings. One of them was the musical tones of a girl's voice. My pulse stirred a little, despite myself.

"One of them's a woman," I said to my comrade in a hard voice. "Getting a thrill out of seeing us sweat and die."

Steve Senn nodded. "It must be Governor Cain's daughter. I heard she came on that rocket-ship that arrived yesterday, with some officer of the Colonial Service who's her fiancé."

As I pressed on the humming drill, I heard the party stop at the edge of the pit, above us. I dared not turn around. I heard the girl exclaim, "But, Captain, isn't it too hot for those men to be working down in that hole?"

The captain of guards answered with a little laugh. "They're pretty tough specimens, Miss Cain. They don't feel it."

"No matter what crimes they've committed, they're still human!" said the girl indignantly.

"Come, Nura," a man's voice, drawling and amused, said. "You're not getting sentimental over your father's convicts?"

My blood froze in my veins at sound of that drawling voice. It couldn't be true, I told myself! My body suddenly rigid, I turned my head to glance up at the party of guards and visitors on the rim of our pit.

I saw the girl, Nura Cain, her young body white and soft in the little grey shorts and jacket she wore, her clear, honest, dark young eyes looking down at me with mingled pity and revulsion.

But my gaze was fixed on the man standing with easy familiarity beside her. He wore the black uniform of the Earth Colonial Service, a tall, strong man of thirty with a dark face and mocking black eyes that widened suddenly as they met mine.

Steve Senn was whispering frantically to me.

"John, turn around and get back to work!"

My blood was singing madly in my ears. "It's Lasser—it's Carse Lasser, the lying traitor who sent me here!"

"The guards will beam you down if you try to get at him!" came Steve's

frenzied plea. "For God's sake, don't—"

Up on the pit rim, Carse Lasser was saying, his eyes on me: "Why, I know that convict! He was once my own superior. He's the notorious Captain Allan who betrayed our post to the Venusians."

The eyes of Nura Cain widened in incredulous horror as she looked down at me. "That traitor?" she exclaimed.

I WAS bunching myself for a leap upward at Carse Lasser's mocking face. That face had tormented my dreams for months, and now my chance had come and I meant to kill —to kill!

Before I could leap, Steve Senn spun me sharply around. I glimpsed Steve's spectacled face, white and desperate, and then Steve's fist crashed against my jaw, and I was in unconscious darkness.

I came out of that darkness, my head aching, to find myself in the pit with a guard bending over me. I looked wildly around. Carse Lasser and the girl were gone, and Steve was gone too.

"What happened?" I cried. "Where's Steve?"

The guard snarled, "Senn's been taken back to barracks to be disciplined for attacking you, his fellow convict."

By now I understood. Steve, seeing me about to make a suicidal attack on Lasser, had knocked me out to stop me from it.

"But it wasn't Steve's fault!" I cried desperately. "It was my fault—you can't punish Steve—"

"Shut up, or his dose will be doubled and you'll get one too!" snapped the guard. "Get back to work."

In a few moments another convict was shoved down into the pit to me, a big, broad-shouldered prisoner with a hard, battered face whom I knew as Halk Kurdley.

"You work with Allan the rest of today, Kurdley," snarled the guard. "And if there's any more fighting, Lord help you!"

We two started silently toiling.

"What happened?" Halk Kurdley asked me swiftly, when the guard was gone.

I told him, gritting the words from taut lips. I concluded, "Steve knocked me out because he saw I was going to attack Lasser, which would have meant my death. What will they do to Steve?"

"Discipline him plenty, I suppose," growled big Halk. His battered face was savage. "What fools we are to let them kill us here by inches, without even trying to get away!"

"What can we do?" I said hopelessly. "They watch our every move by day, and at night cage us in that prison-pen that nothing could escape from."

"Just the same, I'm not going to die toiling here like a beast," said Kurdley, taut, and was silent thenceforward.

When the feeble little sun sank from sight, and the green sky began to darken, work was halted. Our tools were checked in and then we exhausted prisoners were marched by the armed guards toward the metal buildings at the colony's heart. We trudged wearily on the lead-soled shoes that held us down against Europa's lesser gravity.

A few officers off duty watched idly as we were marched through the colony. And as usual there were a few Europans, come as friendly visitors from the surrounding jungles. Big, green, rotund creatures with bulbous heads, watching us with their huge, faintly glowing eyes, their flipper-hands holding the short spears they used for hunting.

I saw, beyond the metal cube of Governor's House, the sleek torpedo shape of the rocket-ship that had arrived the day before. And as we tramped past the house, I heard light voices and laughter inside from those whom the ship had brought.

"Carse Lasser—in there talking and laughing," I told myself fiercely. "But I'll kill him yet—my chance will come!"

The barracks where we were shut up every night consisted of a dozen of

metal cabins, each housing a dozen prisoners. There was no wall around the barracks, nothing but a ring of thick metal posts that rose from the white rock, at ten-foot intervals.

BUT once we were all inside this ring, and the guards all outside, the captain of guards produced a key and turned a switch outside. Instantly from the posts spread a web of shining force, a high barrier of full-strength atomic beams which nothing could touch and live. It imprisoned us more effectually than any wall could have done.

I looked anxiously around the prison-pen for Steve Senn. Then I ran into the dark little cabin, furnished only with rows of metal bunks, in which Steve and I had our quarters.

"Steve, are you—" I started to ask. Then I stopped suddenly, glimpsing Steve Senn sprawled in one of the bunks. I bent over him, caught my breath. Steve lay face down, his bare back burned deeply by a dozen sickening weals.

"*Steve!*" I yelled, clutching my comrade's slight form. "What did they do to you?"

Steve Senn's eyes opened behind his spectacles, blinking with agonized pain. He whispered, "They—they half-beamed me for knocking you down."

My blood ran cold. One of the atomic beams, at half strength, had been applied to my comrade's back.

My hands clenched futilely, and tears came into my eyes. "And you did it to save me!" I said hoarsely. Then I got to my feet, shaken with terrible rage. "I'll make them pay for this!"

A deep, awe-struck voice behind me asked, "What in the devil did they do to Senn?" It was Halk Kurdley. The big convict had entered the cabin, and the other prisoners were crowding around its door.

I told them, jerking the syllables from lips that were stiff with passion. Halk Kurdley's craggy face became dark. Helpless oaths went up from the others.

"It's not the first time some of us have been half-beamed, but if we're men, it'll be the last time!" Halk snarled.

"What do you mean?" I demanded.

"I mean that we're going to mutiny and escape, if you're all with me!" growled the big convict.

"*Escape?*" cried someone.

It was as though a lightning flash had passed over the dark convict crowd, transforming their faces into wild masks.

"Not so loud!" cautioned the giant convict. "We don't want the guards outside the prison-pen to hear us.

"Will you lead us, John Allan?" he said rapidly to me. "We can surprise and overpower the guards, once we get out of this pen, and seize that rocket-ship. We can operate it—I was tube-man on a rocket-ship ten years, and so were lots of others of us, in the Earth Colonial Service. And Steve Senn was officer of a Colonial Service cruiser, and can navigate us anywhere in the solar system. We'll take to free space, and not all their cruisers will ever find us! What if we are outlaws—we'll find some undiscovered asteroid or moon that's habitable, and settle down there and make our own world!"

"But, Halk," I cried, "how can we get out of this prison-pen, even? Nothing can go through that force-wall and live."

"We're not going through it—we're going under it!" Kurdley said. "We'll tunnel our way beneath the force-wall."

"Tunnel out without tools? You're mad!"

HALK bent and lifted his metal bunk aside and then raised what was apparently a solid section of the cabin's rock floor. Beneath was revealed a cavity in which lay glinting tools, a half dozen atomic drills and chisels.

"With these we can dig out, from the floor of this cabin beneath the force-wall, in a few hours," Halk said.

"Where did you get them?" I cried. "You can't have stolen them from the

workings—they check our tools there nightly."

"They do," Halk said grimly, "but I took these piecemeal, a screw from one drill, a point from another, an atom-chamber from another, and so on, during the last two years. I assembled and hid them here and they're ready for use, to help us escape.

"Are you going to lead us, John Allan?" he asked. "You've led men before, and if anyone can keep this bunch under control, you can. Will you take the risk of leading this mutiny?"

"Yes, I'll lead you!" I blazed. "I'll take any risk, do anything for a chance to kill Carse Lasser."

"I'll follow wherever you lead, John," Steve said weakly from his bunk. "Anything is better than this living death."

"Do you all feel the same?" I challenged the crowd of convicts outside. "Do you prefer mutiny and a chance for freedom than to die here by

"Mutiny — freedom!" they exclaimed wildly.

I grabbed one of the atomic drills, and Halk Kurdley and other of the prisoners in the cabin grasped tools also.

"Then dig and drill, as you've never done before!" my voice crackled. "For you're digging now for liberty!"

CHAPTER II

Revolt in the Dark

HUM of atomic drills in the hot darkness, thump of falling chunks of rock, hoarse whispers of the panting men who labored there with me, four feet beneath the surface. Hours had passed and we had driven our tunnel yards through the soft rock.

"John, how far yet to go?" gasped one of the men toiling with me in the darkness of the tunnel's end.

"At least six feet yet. We've got to be sure that we come to the surface outside the force-wall."
inches?"

I drove my drill savagely deeper as I spoke, its humming rhythm spelling in my ears, "*Lasser, Lasser—kill, kill. . . .*"

As Halk Kurdley and I, with two other convicts, loosened the porous rock, other prisoners removed it, crawling back the tunnel with it and up into the cabin where we had started our passage.

The tunnel was barely high enough for a stooping man to pass through. The men carrying away the loose rock collided with each other in the dark, uttering choked exclamations.

It was like laboring in a strange inferno—damned souls condemned to burrow blindly and ceaselessly through the rock. Yet we toiled madly on.

We knew that the glowing force-wall would hide from the guards outside any vision of our unusual activities inside the prison-pen. But if any guards should hear something amiss, and become suspicious, discovery would be swift—and punishment swifter!

At last I cried, "We've come six feet—we must be out beyond the force-wall now. Start digging upward."

The perspiring bodies of Halk and my other co-workers pressed against mine in the dark as we started to drill upward.

Rock chunks bruised my shoulders as they fell on me, and rock dust blinded my eyes. Halk Kurdley was exerting all his giant strength, and the men below were scurrying back and forth like desperate rats to carry back the rock debris to the cabin.

My drill-point suddenly broke upward without resistance, and the mechanism raced wildly in my hands.

"We're through!" I exclaimed. "Tell the men to be ready in the tunnel, while Halk and I make an opening.

"Easy, Halk," I adjured the giant. "If we make too much racket breaking up through, all the guards will be on us."

Slowly, cautiously, we enlarged the opening. In a few moments it was large enough for me to stick my head

up through. Shaking the dust from my eyes, I peered tensely about.

Hardly a yard behind me glowed the tall wall of opaque white force beneath which we had tunneled. Before me lay a row of dark metal supply houses, and to the right of these, extended the guards' quarters and arsenal. The Governor's House and the dock of the rocket-ship lay farther around the colony.

The huge disc of Jupiter, now almost directly overhead, poured down a flood of silvery light on everything. I saw no one in sight, though I heard the voices of the guards from their quarters. I lowered myself back down into the tunnel.

"All right, Halk," I said swiftly. "We're going out."

Rapidly our drills enlarged the opening until it was several feet across. Then I pulled myself up through. My breast expanded—I was free, free for vengeance! Halk Kurdley's bulky form emerged beside me in a moment. I whispered down to the crowding, eager convicts in the tunnel.

"We'll have to have weapons first of all, or the guards will mow us down like sheep," I told them. "Wait here in the tunnel while Halk and I try the arsenal."

A FEW seconds later saw Kurdley and me slipping along behind the row of buildings toward the square arsenal. Like two black phantoms in the silver light, we crept along the side of the building. Its windows were barred and we could see an officer inside, checking the racks of beam-weapons. There was a guard at the door in front, as usual.

Two shadows glided along the silvered metal wall toward the front of the building. Then a swift, soundless rush, a crushing blow from Halk's great fist, and the guard sank senseless.

I grabbed the unconscious man's beam-pistol. Halk's hands tightened on his throat, but I struck them up.

"No, no killing unless absolutely necessary!" I whispered authoritatively. "There's only one man in this colony I'm going to kill, and that's going to be in fair fight."

Halk Kurdley growled deep in his throat, but let the man fall. I advanced and softly tried the door of the arsenal. It was locked inside. I took a desperate chance, and knocked boldly on it.

The officer inside opened it unsuspectingly, and peering out, started to ask, "What—"

My fist caught his jaw at that instant, and he slumped back, knocked cleanly out. We leaped into the arsenal. In a few moments Halk and I were making our way swiftly back toward the tunnel opening, staggering beneath the weight of the dozens of beam-rifles and beam-pilots we carried.

We distributed the weapons rapidly to the convicts as they emerged from the tunnel into Jupiter's silver light. Then I divided them into two groups, with rapid orders.

"My band will overpower the guards off duty, in the guard-houses," I whispered. "Halk, you and your men spread around the colony and mop up all the sentries on post and any Europans who are still here. Be careful of the Europans—there's always a few of them around and they're quick as cats. Bind the men you overpower but don't kill unless absolutely necessary," I added. "This is going to be an escape, not a butchery. Prevent any alarm being sounded, and when you're through, report back to me at the guard-houses. Then we'll seize the officers in Governor's House, and after I've—done something—we'll take the rocket-ship and be off!"

Halk Kurdley moved soundlessly off with his followers, while I led mine rapidly toward the nearby row of guard-houses.

There wasn't any fight when we burst into the guards' quarters—there wasn't any chance of one. Taken completely by surprise, never dreaming that we could escape that force-walled prison pen, the guards, stupefied, reached for the ceiling at our order.

My men bound them, treating them roughly enough as they did so. We

all had a score against these guards, and I knew it would not take much to set my men to butchering the lot.

Halk and his followers came running through the silver light to us as we emerged from the guard-houses, where I had left a few men to stand watch over our captives.

"Everything went like a charm!" Halk whispered excitedly. "We mopped up every sentry in the colony without firing one beam. We were lucky—there isn't a Europan in the colony tonight."

"No Europans here at all?" I said amazedly. For usually there were always a few of the semi-intelligent creatures hanging around the colony, night or day. Governor Cain had always followed a friendly policy toward them, and let them visit the colony freely at all times. Why were they all shunning it tonight?

But I banished that question from my mind, for my band of followers were tensely awaiting my next orders.

"All right, men, to Governor's House!" I told them. "And in a half hour we'll be leaving in that ship!"

At a fiercely eager trot we headed toward the square administration building. Its windows were still lighted, and casual voices were audible from inside.

AT my command, the convicts encircled the building, covering all its doors. Then Halk and Steve and I, with twenty of our men, strode to the front door. As I laid my hand on its knob, my heart swelled throbbingly. At last my hour had come.

I tore open that door. The people in the main living-hall turned startledly. Then they stared at us frozenly, Governor Daniel Cain's austere, elderly face stupefied, his daughter's dark eyes wide with incredulity, the others there as petrified.

But my eyes had found Carse Lasser. He had been bending over Nura Cain when we burst in, and as he looked up and met my eyes, his face went grey with surprise.

An unnerving spectacle we must have been to them! I know my own face was distorted by my mad revenge-lust, and Halk Kurdley's battered, savage face, Steve's pain-warped one, and the wild countenances of my men and our leveled beam-pistols must have been terror-inspiring.

"A mutiny!" yelled Governor Cain, and his hand flew to an alarm button on the wall.

"Save it!" I snarled. "Your guards are all bound tight and under guard —we're masters of this colony."

An officer at the back of the room, one of the officers of the rocket-ship, reached for his beam-pistol.

Flash! The streak of white fire from my pistol scorched his arm before he could draw his weapon.

"Halk, take what weapons they have on them," I rapped. "If any more of you people move, you'll get a beam through you."

Daniel Cain showed no sign of fear, but his austere face was crimson with rage. "What do you convicts mean to do?"

"We're not going to slaughter you, if that's what you're thinking," I grated. "We're going to take that rocket-ship and leave—after I've performed a certain duty."

I saw Carse Lasser's eyes narrow at my last words. I knew that he knew well enough what I meant.

"You're mad to think you can get away with this!" Daniel Cain was storming. "The Colonial Service ships will hunt you down. The solar system won't be big enough to hide you! Lay down those arms and return to your quarters and you'll not be punished for this outbreak. Otherwise you'll suffer the death penalty."

I laughed harshly. And Halk Kurdley and all the men behind me laughed—an outburst of bitter, savage mirth.

Daniel Cain's face grew deeper scarlet. "You mutinous dogs!" he cried. "Half you men were in the Colonial Service yourselves once—and you've sunk so low you mutiny against the Service!"

Nura Cain told him steadily, "There's no use talking to them, Father. Men like these don't understand what you mean." Her eyes

burned with passionate contempt as she spoke, looking at me. I paid no heed to her—what did the scorn of Carse Lasser's sweetheart mean to me?

I was looking straight at Lasser, had never taken my eyes off him since we entered. Now I spoke to him, and there was such a hard throbbing of hate in my throat that my voice was a whisper.

"Lasser," I whispered, and he read the rest in my eyes. His face showed no fear. Black-hearted traitor and liar he was, but not a coward.

"You're going to kill me, John Allan?" he said calmly. "Because it was my evidence that proved your treachery?"

"Yes, I'm going to kill you, Lasser," I said hoarsely. "I've been waiting a long time to kill you, and it's one thing I'm doing before we leave this world forever."

Nura Cain's dark eyes widened with horror and she sprang in front of Lasser, facing me, white as death.

"You can't murder him!" she cried. "John Allan, you were an officer, a gentleman, once! You can't put this black stain on your soul—"

LASSER put her quietly aside. "It's no use, Nura," he told her evenly. "Nothing will stop him. I know."

My men were watching, fascinated. I think my face must have been very strange, for I know there was a hint of horror even in the eyes of Halk and Steve as they watched me.

I told Lasser, "I'm not going to murder you in cold blood. We're going outside and you'll be given a beam-pistol. We'll take positions a hundred yards apart and walk toward each other, firing at will—a fair stand-up fight."

Carse Lasser smiled bitterly. "You call it a fair fight, John Allan, when you were always the quickest shot with a beam in the Service. You know you're going to kill me."

"Yes, I know I'm going to kill you," I repeated. "And it's going to be like wine to me to see the fear in your eyes just before you die, the pain in them when my beam hits you!" I motioned to the door. "We're going out now, Lasser. Steve, you stay here with enough men to guard these people."

Nura Cain would have leaped to try to stop us, but her father restrained her. I heard her utter a strangled sob.

Lasser walked quietly to the door, and went out ahead of me. Halk and most of my men came behind, a tense, silent company emerging from the building into the silver light of great Jupiter.

I was hardly conscious of the others. Six long months of mad longing for revenge, of wild hate, had risen to this moment when Lasser was going to fall before the tearing beam of my pistol. I had *known* through all those months that he would be mine.

"Give him a pistol, Halk," I said. The big convict made no answer, staring off across the colony, his face frozen.

"Give him a pistol!" I rasped angrily. "What are you staring at?"

He did not hear me. His jaw made a movement as though to speak. I turned and glanced across the silver-lit colony in the same direction, and I felt my own face freeze in my stupefaction.

From the towering fern jungles on all sides, thousands on thousands of rotund Europans, armed with spears, were surging silently toward the colony in the silver light!

Halk's hoarse cry found utterance at last. "God in heaven! The Europans are attacking the colony!"

CHAPTER III

Hemmed In

AT the same moment came distant yells of alarm from my men who had replaced the captured sentries around the colony. They were firing their beams desperately at the oncoming hordes.

"So *this* is why there were no Europans in the colony tonight!" Halk Kurdley shouted wildly. "They were

gathering forces for this attack—they've been planning it for months!"

I yelled to some of my followers, "Run to our men around the colony! Tell them to release the guards and run here!"

"John," Halk cried, "can't we get to the ship and get away?"

"Too late!" I told him. "Look, it would be suicide to try it."

I was pointing to the distant rocket-ship, visible a few hundred yards away at the edge of the colony. The ship, of necessity, had been landed outside the colony's group of buildings, and the attacking Europan hordes had almost reached it. Before we could make the ship, there would be hundreds of the creatures around it.

My men, with the captured guards whose bonds they had hastily cut, were running in from across the colony. Spears were flying through the air, from the oncoming Europans.

Steve Senn had come rushing out of the building, with Daniel Cain and his daughter and the others following.

Cain's face blanched as he glimpsed the Europan masses surging through the silver light. He cried, stupefied, "God, I never dreamed the Europans would attack the colony!"

"We're lost!" cried one of his officers. "We can never stand off that horde!"

"There's one place in the colony where we *can* stand them off!" I shouted. "The prison-pen! Once we're inside it, the Europans can't come through the force-wall at us.

"Steve, take these people there—get them into the pen through our tunnel!" I cried. "We'll follow—hurry!"

As Steve started herding them toward the prison-pen I glimpsed Carse Lasser's startled face and cried to him, "Don't think this means escape for you, Lasser! You're going to die, one way or another, no matter what happens."

Then I sprang out into the street of the colony with Halk Kurdley and rallied my men as they came running from all directions.

"No panic!" I shouted to them. "We've got to retreat to the prison-pen in good order or none of us will reach it."

The Europans were coming down that little street in a solid mass of green, rotund bodies, thousands of huge, glowing eyes glaring at us, their grotesque flipper hands already casting their spears at us and their reedy, piping voices making a mad clamor.

WE bunched together and our white beams clove toward the horde. The whole front rank of the Europans went down in a scorched, steaming heap as our beams hit them. But the rest came grimly on, their showers of spears striking down many of us.

"Back, men!" I called. "Back slowly—don't let them get us on the run. Slowly—"

"There's more of them coming at us from the south and west!" yelled Halk Kurdley. "They're almost all around us!"

"Back toward the right—toward the prison-pen!" I shouted to my followers. "Slowly, men—"

We had become a compact knot of Earthmen, fighting our way savagely back toward the glowing enclosure of the prison-pen, our beams playing death amid the creatures who pressed us.

As I shouted orders, my beam-pistols hot in my hands from firing, I almost forgot that I was a convict leader of convicts, and seemed again to be Captain John Allan of the Service, battling in the Venusian swamps. We retreated thus, striking fiercely back, to the mouth of the tunnel beneath the force-wall.

Steve Senn appeared beside me and shouted, "I've got all the others through the tunnel into the pen!"

"Get our own men in now — as quickly as possible!" I yelled. "We can't hold these brutes back much longer."

Our knot now surrounded the hole in the rock that was the tunnel mouth. One by one, we began dropping into it.

When only Halk and I and a few others were left on the surface the

Europans, maddened at sight of us escaping them, came on us in a rush which nothing could stop. Big bodies knocked me off my feet.

I fired my pistol desperately upward at the Europans atop me, and felt the back-flash of the beam scorch my shoulder. I thought I was done for—then someone grabbed my ankles and dragged me downward into the mouth of the tunnel.

It was Halk Kurdley, and he and I alone escaped of that last little group. The Europans tried to follow us into the tunnel, but we scrambled back into the passage where their spears could not reach us, and beamed them one by one as they entered the tunnel until they drew back. We heard their raging clamor outside.

I wiped the perspiration from my brow.

"God, what a fight! But we're safe for the time being."

"Safe until we try to get out of here for food and water," Halk panted. "Then Lord help us."

I left a half dozen convicts to guard the tunnel, and then crept with Halk back along it, up into the prison-pen.

The glowing wall of force around it hid the Europans outside from sight. But we could hear them swarming wildly outside, and the spears they flung came over the high barrier.

I told my men and our captive officers and guards:

"Get into these barracks-cabins before those spears hit someone."

"What difference does it make?" Daniel Cain said with dull hopelessness. "They'll get us before long anyway."

"They may try to starve us out," I admitted, "but it'll take them a long time. We needn't give up hope yet."

"You don't understand," the governor told me. "This force-wall around the pen is fed by atom-chambers in a nearby building. Their charge is only good for one night and they have to be charged each day by atomic generators. Soon after morning, the force-wall will begin to fail, and when it does, the Europans will surge in on us without hindrance."

I stared at him as I heard those words of doom. I heard Halk Kurdley whisper, beside me, "To think we came that close to escaping, and then have to die anyway. To think we came that close!"

CHAPTER IV

When the Wall Failed

THE men around me stood in the silver light of Jupiter like men who have just heard a death sentence from which there is no appeal. In our stricken silence, the clamor of the Europans surging around the prison-pen seemed doubly loud.

I saw Nura Cain looking toward her father, and noticed that even now there was no fear in her eyes. And there was no fear in Carse Lasser's face, either. The old taunting mockery was strong in his eyes as they met mine.

"It seems, John Allan," he told me, "that *both* of us are going to die here."

At his words, the old hate surged up in me. "You're going to die, Lasser, yes," I told him. "Even if this world split in two, I'd make sure of that. But my men and I are *not* going to die. We're going to escape from this hell-trap Earth sent us to."

I swung to Steve and Halk. "The Europans won't bother that rocket-ship—they've always been in more deadly fear of rocket-ships than anything else, and it was closed up anyway. If we can reach it, we can still get away from this devil's moon."

"*If* we can reach it," said Steve sadly. "You know as well as I that it's impossible, John."

Halk nodded grim agreement. "If we went out that tunnel mouth, the Europans would have us before we went a yard."

"Are you blind?" I cried to them. "I don't mean to go out that tunnel at all. I mean to do what we did once before; drive a new tunnel out under the force-wall, under the Europans themselves, a tunnel that will emerge near the rocket-ship!"

Halk caught his breath and his cold eyes flamed. "John Allan—by heaven!

We *could* maybe do it before the force-wall fails, if we still have the tools!"

"They're still there inside our first tunnel where we dropped them when we reached the surface," I told him. "Get them and start the men working on a new tunnel, one that will bring us out behind Governor's House. That will be a passage several hundred feet long."

HE sprang to obey and in a few moments had a score of our convict followers working desperately, drilling down a new tunnel close inside the force-wall.

I asked one of our prisoners, an officer of the rocket-ship: "How many people will that ship hold, at the most?"

"Not more than a hundred and sixty," he answered. "It's not a transport, just a small staff ship."

I counted our men. There were still ninety-two of us who had not been stricken down by the Europan spears. I turned toward Daniel Cain. He must have realized what was in my mind, for he had become very stiff and straight.

"My men and I are going out of here," I told him. "We've room for sixty-eight of you people in the ship and we'll take that many along and land them on some inhabited world. The rest of you will have to stay, and you can draw lots to see who goes and who stays.

"There are two exceptions," I added. "One is your daughter. Being a woman, she need draw no lot, but can go. The other exception is Carse Lasser. No matter who else goes, *he is going to stay!*" And I told Lasser bitterly, "You see, Lasser, we do *not* both die. It's better than any death I could give you, letting you stay here for the Europans to tear you to pieces."

"I draw no lot," Daniel Cain said coldly. "I was appointed governor of this moon by the Earth Colonial Service, and while one Earthman stays on it, I stay."

Nura said, "And I stay too, John Allan."

Something in her proud face stung me. I turned savagely to the other prisoners. "Well, what about the rest of you?"

One officer spoke for them all, slowly. "None of us are going. We don't desert comrades in the Service."

In the Service? It came to me oddly how often I, John Allan, had proudly used that phrase, too. I thrust the thought down in my hot anger, and cried, "Then stay, all of you! Stay and die for your damned Service, and see what good it does you!"

Steve Senn plucked at my sleeve. "John, then we're going to leave them all here to die?"

"Of course we are!" I shouted. "Do you want to stay and die with them, the men who half-beamed you last evening?"

He said, "No, but—"

He didn't finish. But his face was a little strange, and so were the faces of Halk and my other men. I strode from them, into the tunnel where part of my men were drilling desperately. I seized a drill and worked savagely, in the hours that followed, driving the tunnel ever farther.

Yet I could not get out of my mind the proud faces of the girl and her father, the strange ones of Steve and Halk.

"The fools!" I snarled to myself. "Because they were in the Service once, they still cling to its traditions."

When I went wearily back out of the tunnel, to be replaced by Halk Kurdley, the sun had risen in the east. Green day now lit the inside of the prison-pen.

Steve was gazing anxiously at the glowing force-wall, which seemed now to be not nearly so brilliant.

"It's failing already," Steve said. "I think it will die completely before another hour."

"An hour ought to be enough for us," I jerked. "We've got the tunnel nearly to Governor's House now."

THE Europans had ceased casting in spears, and were just waiting outside now, it seemed—waiting for us to come out. I strode to where Daniel Cain sat silently with his

daughter and Lasser. They were alone.

"We're leaving in less than an hour," I told him curtly. "When we go, we'll leave you most of the beam-pistols. Not that they'll do you much good when the Europans get in here to you."

"I want no favors from you, John Allan," Daniel Cain said stiffly. "A traitor and a renegade to Earth—"

His words touched off the emotions seething in me. "A renegade to Earth, am I?" I cried. "What if I am? I was faithful to Earth and its damned Service too long! For fifteen years I gave my strength, my life, to the Service, burned by sand-storms in the Martian deserts, shaken with swamp-fever in the Venusian marshes, never complaining. And what did the Service do for me? It rewarded me by sending me here to a living death. Yes, I'm a renegade, and I glory in it!"

Nura Cain looked at me pityingly. "I'm sorry for you, John Allan," she said levelly. "Sorry for you because, even though you're a convicted traitor, your conscience still hurts you and will always hurt you for what you're doing now."

"Save your pity for Lasser and yourself," I grated. "You'll need it when the Europans come in."

Steve Senn came running up. "The wall's going fast, John! We haven't much longer!"

I ran with him to the tunnel. Halk was emerging from it, smeared with rock-dust, his eyes wild. "We just broke through behind Governor's House!" he exclaimed. "There's only a few Europans back there, as far as I can see."

"All right, men, to the tunnel!" I shouted. "The wall will fail any minute now! Leave half your weapons here."

The glowing wall had by now become a mere vague sheet of light, through which could be dimly seen the Europans. They were pressing forward, still afraid to touch the wall, but plainly aware it was failing. Nura uttered a little cry and shrank to her father.

My men were entering the tunnel, slowly, looking back at those we were leaving. I cried to Cain and the others, "Do you *still* refuse to leave?"

They made no answer. Daniel Cain had his arm protectingly around his daughter.

"Then stay and die, all of you!" I cried. "Come on, Steve!"

We pressed through the dark tunnel, scrambling and stooping. At its end was the opening Halk had made, and we emerged from this into the daylight, behind the square administration building.

There was not a Europan in sight between us and the rocket-ship! And we saw why, as we emerged. The creatures were all running toward the prison-pen to join the horde there. The wall of force had faded to a faint glow, was almost completely dead.

"It'll be all up with them in a couple of minutes more!" said Steve with a sob.

"Come on—to the ship!" I yelled.

We ran toward the craft. The Europans had not molested it, such was their fear of the thundering rocket-ships. In a few moments we were inside, and Steve and Halk and I raced up to the conning-tower.

"Close all the space-doors!" I shouted down the ladder, and heard the slam of the closing doors.

Steve was gazing tensely out the conning-tower window toward the prison-pen, at which our ship pointed almost directly.

"The wall's dead—the Europans are going in!" he cried.

BUT I too could see. Daniel Cain and his followers had retreated into the barracks cabins, and were trying with the weapons we had left to hold off the Europans now swarming inside the prison-pen.

I saw, and suddenly I *knew!* I knew what I must subconsciously have known all the time, that once a man joins the Service, he is a Service man until he dies.

I said rapidly, "Steve, if you turned on the stern rocket-tubes of this ship, without turning on the keel-tubes, the ship would just plow across the colony without rising, wouldn't it? It

would crash through those Europans around the prison-pen?"

"It would, yes," said Steve wonderingly. Then suddenly he gripped my shoulders. "John, you're going to do it?"

Halk cried, "It means prison again, the death penalty for mutiny, even if we survive the crash. But I say—do it!"

I cried, *"Fire the stern-tubes, Steve!"*

Steve's fingers shot down on the bank of firing keys, and the torpedo-like bulk of the rocket-ship plunged forward along the ground as its stern-tubes thundered.

As I was hurled about in the conning-tower, I had a lightning glimpse of our ship plowing through light metal buildings like paper, tearing then through the massed Europans outside the prison-pen and grinding scores, hundreds of them to pulp.

Then the ship had bucked, heeled over wildly. Even as it whirled, I could see Europans on all sides breaking in wild panic toward the jungles. Then it crashed down on its side, and there came a shock that knocked Steve senseless and snapped my left arm.

The wrecked ship lay still. I staggered up and Halk and I revived Steve. We got down into the hull, and found our men bruised, some with broken limbs, but none killed. We got a space-door open and stumbled out into the daylight.

The last of the Europans were vanishing into the jungles, stricken with awful panic by the sudden running wild of the rocket-ship which they feared above all else.

Dead Europans lay around the doors of the cabins they had been besieging. Daniel Cain and his men were running toward us, their faces wild.

"John Allan!" cried Cain. "You saved us by wrecking the ship—they were just forcing us into the cabins!"

Nura Cain, white-faced, plucked my arm. "Carse was wounded in holding them off—is dying," she told me. "He wants to see you, John Allan."

Numbly I went with her and the others to where Carse Lasser lay in the door of a cabin. His face was waxy white and there was a spear in his side and a heap of Europan dead in front of him.

His eyes, black eyes from which all mockery was gone at last, met mine searchingly.

"Want—everybody to hear," he choked. "I *did* accuse John Allan falsely—it was I sold weapons to Venusians—not he. I saw him wreck the ship just now—to save us—" He held up a wavering, uncertain hand. "If—if you don't mind, Allan."

I TOOK it. His eyes flickered, and then his hand went lax as life left him. Nura was weeping softly.

"God, Allan, you *were* innocent!" Daniel Cain told me. "Yet you saved us . . ." His voice rose. "We all heard that confession, and it clears you once and for all. And as for the rest of you men"—his eyes swept Halk and Steve and my bruised convict followers—"I'm certain that in view of the way in which you broke up the Europan attack on this colony, the Service will grant all of you a full pardon."

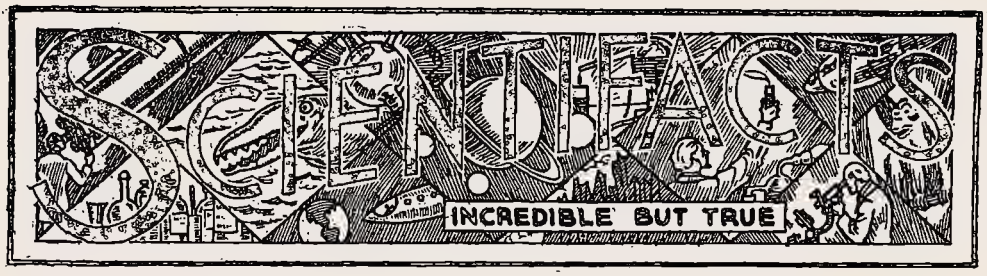
A wild cheer went up from Halk and Steve and my men. I was too numbed with surprise to feel anything yet, myself.

I heard Nura telling me, "I—I want you to forgive me for those things I said to you, John Allan. Will you?"

She too had extended her little hand. I took it, and for the first time in six long months a little warmth seemed to penetrate my frozen heart. I suddenly realized everything. I would be Captain John Allan of the Service again. I would go out again to the far places with Earth's dauntless pioneers, one of the proud vanguard of the conquering Earthmen.

I turned a little from the others. I didn't want any of them but Nura to see the tears that were in my eyes.

Next Issue: THE ICE ENTITY, a Novelette of an Amazing Polar Invasion, by JACK WILLIAMSON



A BRAND-NEW, FASCINATING FEATURE

By J. B. WALTER

THE HEAT OF A CANDLE CAN BE DETECTED FIFTY MILES AWAY

ONE single candle-power of light will not be visible at a very short distance. All manner of lenses cannot add much to the penetration of its light. But the heat of this candle, which cannot be felt by the most sensitive skin a few feet from the wick, can be picked up fifty miles away and concentrated by proper lenses, and not only felt but be measured accurately by sensitive galvanometers.

The heating effect causes an explosion of infra-red rays. Such rays are neither reflected nor absorbed by the atmosphere, and therefore travel enormous distances without loss of power. It is said that the new government airplane detector has been built on this principle. A plane many miles too far off to be seen or heard with the aid of the most sensitive instruments generates heat in its engine. The hot spot in the sky may be discovered instantly by the new detector.

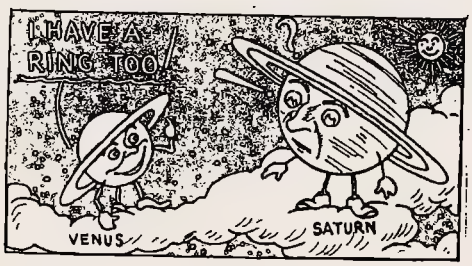
STAR BRIGHT NIGHTS GET LITTLE LIGHT FROM THE STARS

ONLY one-fifth the light that makes brilliant moonless nights so bright comes from the stars and the planets. Four-fifths of the brilliance must be accredited to an electrical disturbance which has as its source the invisible sun. Though the light rays of the sun cannot bend around the curve of the earth, the great stream of electrical particles shot from the glowing globe are pulled around the curve by gravitational force. These strike the upper atmosphere and disrupt the molecules they intercept with such terrific force that they strike sparks. As the bullets of energy strike constantly, the glow is great enough to illuminate the dark side of the earth.

If all the light from the stars were to be eliminated by some freak of nature we would probably be unaware of any increased darkness; but if we should lose the light from the impact of the electric particles upon the upper atmosphere the brightest moonless night would be dark indeed.

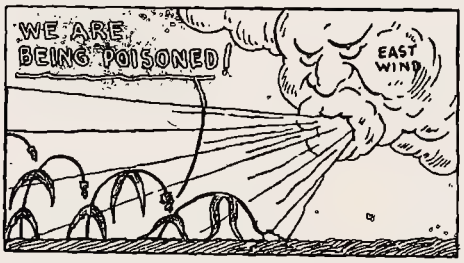
VENUS, TOO, HAS A RING

AMONG all the planets of our solar system, only Saturn is permanently ringed by a series of bright bands. But when the planet Venus is about one degree from the sun it appears as a bright disc surrounded by a still brighter circlet of light. The phenomenon appears for but a brief period which recurs but once in every hundred years. At other times though it is often more brilliant than the brightest fixed star, Venus is not in a position from which the ring may be observed. The appearance of this ring is offered as evidence of an atmosphere upon the planet.



EAST WINDS POISON CROPS

IN certain sections of the country it has long been believed that winds from the east poison crops. Such ideas have been dismissed as superstition, but science has effectively demon-



strated that there is a good measure of truth in the contention. Winds crossing the Gulf Stream are warm and moisture-laden. The warm humid air induces a more normal increase in the growth of pests which destroy crops, and thus it may be well said that winds from the east are poison to them.

SEA LEVEL IS RISING

THE sea level is rising more than an inch in every eight years. It is believed that the ice-pack in the Arctic regions is slowly melting, and the water, of course, flows into the sea. It is this fresh addition of water that is slowly lifting the sea-level. If the glacial area should all melt the sea would rise more than one hundred and fifty feet, which would be quite enough to completely engulf and destroy every coastal city of major importance throughout the world.

TWO HUNDRED POUNDS MAY BECOME LESS THAN ONE

WEIGHT is a figure that measures a relation between masses, and the further a mass is from another the less it weighs. If we should fire a two hundred pound projectile toward the moon its weight would decrease as it moved further and further from the earth.

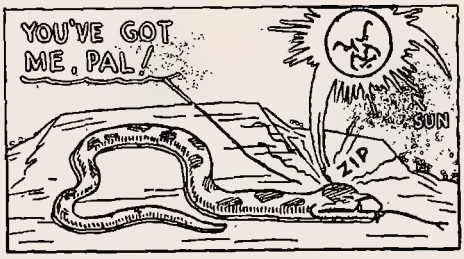
At a distance of four thousand miles it would weigh but fifty pounds, and at eight thousand but twenty-five. With every mile it proceeded from the earth it would weigh less, until at a distance of sixty-four thousand miles its weight would be reduced to less than eight-tenths of a pound.

Of course, if it proceeded in a straight line between the earth and the moon it would reach a point at which the gravitation pull of the earth would be exactly neutralized by that of the moon. As it proceeded the gravity pull of the moon would exert itself upon the projectile, and when at last it fell upon the surface of this much smaller body its weight would be fixed by the relation between its mass and the mass of the moon.

The mass of the moon is one hundredth that of the earth, so the two hundred pound projectile would weigh, on the satellite, but two pounds.

SUN KILLS RATTLESNAKES AND GILA MONSTERS

THE accepted notion that snakes and lizards delight to bask upon a flat rock in the heat of the sun has been definitely disproved. At certain

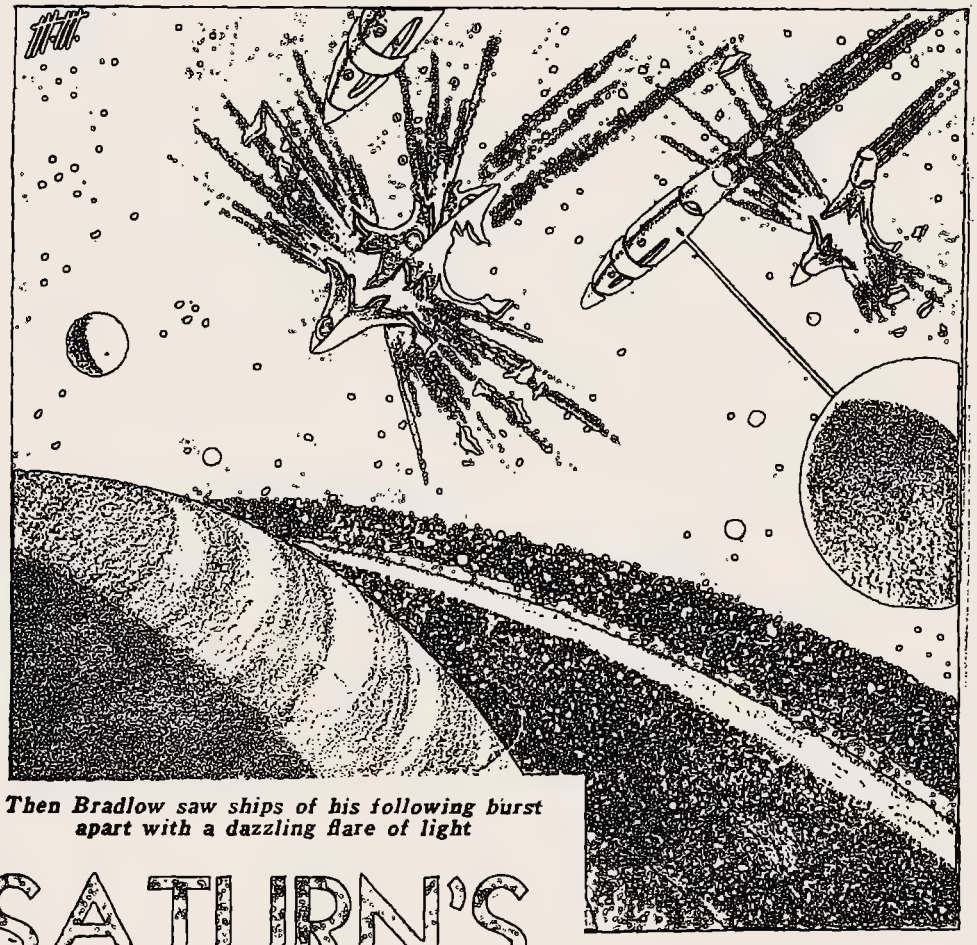


times of the year desert sands may reach a temperature as high as one hundred and fifty degrees, and a short exposure on a surface as hot as this will kill the reptiles. In fact, if the snake be suspended even five feet above this surface the heat of the sun will soon prove fatal.

YOU CAN'T MAP IT!

IT is impossible to draw a map of the Solar System to any scale. In order to show the moons of Saturn, the Earth and Mars and still take in Pluto at a distance of 2,000,000,000 miles, the map would have to cover an area of about 22,000 square miles!

Helplessly Marooned in Space, Earthman and Uranian Devise a Cunning Trap for an Interplanetary Outlaw!



Then Bradlow saw ships of his following burst apart with a dazzling flare of light

SATURN'S RINGMASTER

By RAYMOND Z. GALLUN

Author of "Old Faithful," "Derelict," etc.

"YOU'RE licked, Raff Orethon. The new Esar repulsion shield will protect me and my people; not the Titanian colony. I could kill you now, but to do so would be a waste of effort, since you are already as good as dead. Sometimes self-murder is justified, my friend. If you and that ridiculous Uranian mascot of yours resorted to suicide, I am certain that you would save yourselves much anguish of mind. That is all. Korse Bradlow, the Ringmaster, has other business.

Goodby, trouble shooter! Farewell!"

Raff Orethon, strapped in the wrecked cabin of his spaceboat, was dimly aware of the words that clicked faintly in the etherphones of his oxygen helmet. His faculties were still numb from the crash. In them there was room for scarcely more than one thought—he had failed.

Foggily he saw Korse Bradlow creep over the rusty surface of the meteor against which the ruined spaceboat was telescoped. He saw him straighten up, holding the metal box which contained the pilfered Esar models tightly against the side of his vacuum armor. He saw Bradlow jump athletically clear of the great lump of cosmic refuse, catch the door-rail of his own gaudily gilded ship floating free in the ether, open the valve, and disappear into the interior.

A moment later the rockets of the golden craft spat blasts of incandescent flame, and it hurtled away, clear of the immeasurably frosty glory of Saturn's Rings. Its form dwindled swiftly among the brittle stars.

"What are we going to do now, Orethon?"

THE question, sounding now in Raff's etherphones, was certainly human enough as far as its arrangement and meaning went; but the curious tinny rasp of it suggested the tones of some cheap and ancient phonograph. And to an uninformed observer its point of origin might have been puzzling at first. It came from the tympanic voice-membrane of Ruzza of Uranus.

Raff did not answer at once. He was trying to straighten things out—trying to remember just what had happened.

The Esar models had been intended for delivery to the colony on the Saturnian moon, Titan; and he had set out from Mars to take them there. But somehow, probably through the agency of his efficient spy system, Korse Bradlow, greatest rogue within the orbit of Pluto, had learned of the mission and had foreseen its purpose. It was a gesture of the forces of law against his piratical depredations.

When a full-sized Esar apparatus had been constructed, its deadly energy shield would screen the domes of the colony, rendering them forever impervious to attack. But meanwhile police craft could continue their assaults on Bradlow's camp on Tethys without fear of reprisal.

It was a dangerous situation for him who, gifted with some touch of poetic humor, had called himself the Ringmaster. And he had acted promptly. Approaching from the rear, he had disabled Raff's flier with a protonic blast, and had caused it to dive into the Rings, where it had been smashed against a meteor. The fact that Orethon had survived the collision, was one of those strange tricks of relativity.

The meteor, hurtling around Saturn at a velocity of many miles per second, had been going just a shade slower than the uncontrolled ship, and in the same direction. And so Raff and his weird companion still lived. And because they were harmless and half stunned and the death by suffocation which was in store for them appealed to his sadistic nature, Bradlow had let them live.

But he had taken the Esar models from them.

Young Orethon could grasp all the details of the situation now.

Dazedly he looked down at the large fibrotex pocket on the front of his space suit. It bulged with abhorrent contents.

"What are we going to do, Ruzza?" he questioned irritably. "Nothing but admire the scenery, I guess—until our oxygen gives out."

Ruzza was a native of the buried caves of Uranus. It was his bulk, which would have weighed a scant three pounds on Earth, that caused Raff's pocket to bulge. Ruzza was a grotesquely humorous demonstration of the fact that all intelligent forms of life need not be wrought in human shape. His body was a ball of leathery brown flesh, pronged with sensitive prehensile feelers. Four of them, longer and thicker than the others, and covered by protecting sheaths of transparent, cellophanelike material,

were thrust ludicrously out of the top of the pocket. They wavered from side to side with a restless motion.

At their tips, looking through the clear texture of his odd space attire, were bright, beady, intelligent eyes. Ruzza was a scientist of note in his own country. His association with Orethon—a matter now of seven Earth months—was an expression of an adventurous yearning in the unnamed soul of the tiny creature. He had paid in bars of priceless actinium for the privilege of traveling around with Orethon on his police duties; and though the young Earthman had often found Ruzza's constant presence annoying, he had endured it because of the pay. Any enterprising youth would have done so.

The Uranian gave his buzzing version of a human laugh. "At least the scenery is very nice, eh, friend?" he questioned.

ORETHON agreed with a sullen nod. It was Ruzza's endless effort to be friendly that irritated him most. But he could not disagree with the little fellow now.

The spectacle around them was the most grandly beautiful in the solar system, and perhaps in the entire universe. The large meteor on which they were marooned was one of myriads that were in sight. Their range in size was tremendous; some were as massive as small mountains, while an immeasurable host of others were as fine as grains of dust. Glowing silvery with the reflected rays of the distant sun, they formed a tremendous arching pathway, the width of several Earths.

Close at hand, the path was murky, like a haze; but distance sharpened its outlines until it became a great ribbon curving around the cloud-wrapped bulk of Saturn. Each cosmic lump and particle that composed it was a minute moon of the monster planet.

Beyond the filmy texture of the Rings, the greater satellites glowed sullenly—Mimas, Rhea, Titan, Tethys—Tethys, home of Bradlow's band. Beyond the moon were the stars, eerily bright against the frigid blackness of infinity.

Under other circumstances Raff Orethon might have found the view even more interesting. But now the harsh grandeur of it only served to emphasize the helplessness of his position. His spaceboat was wrecked beyond any possibility of repair; a glance through the shattered observation window at its crumpled prow, gleaming in the contrasting lights of many spheres, was enough to tell him that.

And it was not only his life and the Uranian's that would be lost; many Titan colonists would perish, and many others would be reduced to a state of slavery. Korse Bradlow would have his way now.

"What will the Ringmaster do, now that he has the repulsion shield?" Ruzza demanded suddenly.

Raff shrugged, annoyed by what seemed to him a childish question.

"You heard his little speech of departure," he said. "Isn't that enough? Among the renegade Terrestrials and Martians in his outfit, there are plenty of skilled mechanics. He'll build a big Esar apparatus to protect his headquarters on Tethys, of course. And he can make another apparatus to screen his fleet. From behind the screen he can blast our orderly colony on Titan out of existence if it doesn't submit. But it will—eventually. He'll rule the whole system of Saturn! So far from their home bases, no Earthly or Martian fleet would dare oppose him. And his depredations against commerce will doubtless continue."

"Zaah, Raff Orethon!" Ruzza buzzed. "It must not happen!"

The Earthman felt exasperation rising within him.

"I'm with you that way, Ruzza," he said. "It must not happen. But I'm afraid it will in spite of anything we can do to prevent it. We're stranded here until doomsday. We can't even save our own necks. Our etherphones, even at maximum power, couldn't send a warning all the way to Titan, even if such a warning would do any good. Our ship can't be repaired, and if it could be, we'd still find it impos-

sible to get far. This is Bradlow's territory; his patrols are never far out of sight. A damaged flier could never escape."

"Supposing some small trick of invisibility were used?" Ruzza queried.

"It would be nice," Raff replied with bitter sarcasm. "It would be easy for us to go right to work and invent an invisibility machine—something which has never been effectively accomplished on any of the known planets."

Ruzza's prongs bristled within the pocket that held him.

"You do not understand what I mean, Raff Orethon!" he shrilled. "It is simpler than that! Wait! Put me down!"

Obediently the Earthman hoisted Ruzza from his odd refuge, and lowered him to the floor of the cabin. The Uranian, clad in his transparent space garment, drew himself with his feelers through the opening left when the craft's door had bulged from its hinges. Raff looked into the periscope to watch him in his swift scrambling progress astern. Presently Ruzza disappeared into a rent in the crumpled jumble of the spaceboat's tail assembly.

THERE was a long silence, during which Orethon remained in the cabin, tentatively fussing with the machine-gun with which the craft was equipped. The weapon's long barrel was badly twisted at the muzzle. But it would be possible to saw off the ruined part, thus making the gun practically as good as new. The complicated sighting mechanism seemed undamaged. But at these thoughts Raff's lips curled cynically. What was the use? He and Ruzza were hopelessly trapped and impotent.

Then the Uranian's voice buzzed and shrilled again in Orethon's helmet phones: "One rocket tube is intact, and another is not beyond repair," Ruzza announced.

"So?" Raff questioned. "What about it? All the new rockets on Earth and Mars wouldn't put this pile of junk into flying trim again!"

"Wait, Raff Orethon," Ruzza answered. "I have the beginning of a plan. I will explain. But we must be careful. The power of our etherphones must be cut down to minimum so that no one will hear."

Raff was mildly curious.

"Mine's at minimum, of course," he said. "Shoot!"

He listened while the Uranian outlined his sketchily conceived scheme in low, buzzing tones. His hard young face, illumined by the contrasting lights of Saturn's system, underwent many swift changes. First it showed the chagrin of doubt, then dawning wonder, then hope. Finally all his natural enthusiasm and resourcefulness, which had seemed to be drained out of him, returned.

Once more he was his old, energetic, forceful self.

"It's worth a try, Ruzza," he said grimly. "Maybe it won't work, but we can't help that."

For a minute he sat chewing his lip and tried to clear up in his mind the hazier phases of the plan.

"We'll have to get rid of what's left of the ship," he mused. "But that should be easy. All we have to do is shove it off into space. And we'll have to plot our course carefully, because we won't have the use of the usual well-balanced guiding machinery. There'll be the danger of colliding with meteors, of course; but that's a risk we'll have to take. Some of Bradlow's men will get us in the end. Or —or maybe—not—"

Raff's brows knitted as he sought to concentrate. His gaze fell on the tiny atomic projectiles in the belts of the machine-gun. Each projectile was filled with an explosive of tremendous violence; and each was fitted with a time fuse that could delay explosion a full minute from the instant of percussion.

Suddenly he was very grateful for the possibilities of those fuses. The delay they offered might spell the difference between life and death for his small, startling companion, and for himself.

"Come on, Ruzza!" he said at last. "We've got a lot to do, but it won't

take long if we will only hurry!"

He unstrapped himself and kicked the ruined door of the flier out of his way. He had tools in his kit—blast-welders, chisels, wrenches. Gingerly he clambered forth onto the pitted surface of the meteor. Its gravity was almost nothing, and a too abrupt movement might have set him adrift in spite of his magnetized boots which attracted the nickel-iron alloy under him.

Like a tumbleweed Ruzza bowled toward him to help. Saturn and its moons looked on, as if fascinated by the strange machinations of living creatures.

SKILFULLY Korse Bradlow guided his gilded space flier toward Tethys. A cruel smirk of triumph curved his thin lips. He was pleased, and he was off guard. He was within his own section of space. There was but one danger that he knew about, and it was not a great one. Meteors were plentiful here, so close to Saturn's Rings. Because of them, and because there was no reason to hurry, he pursued his course at leisure.

His thoughts were pleasant. The exquisite bit of piracy he had just accomplished would be accepted by the horde he commanded as sure evidence of his right to rule. That was why he had undertaken the theft of the Esar models single-handed. His following, gleaned from the criminal ranks of a solar system, was a fickle crowd at best. To remain its leader, a man must constantly demonstrate his prowess.

And Korse Bradlow knew that he was the only man fit to command. He had made Bradlow's Circus; he had made himself its Ringmaster. Without him, petty and bloody differences would soon cause it to break up, its various factions falling easy prey to the police patrols.

But his position was doubly assured now. In his mind's eye he could picture pleasant things that soon would happen. He could see ships, protected by the blue fire of the repulsion shield, hurtling down upon Titan, smashing the domes of its colony and whipping its people into submission. Titan would yield before other Esar models could be sent to the harassed inhabitants. Korse Bradlow was happy, steeped in his rambling dreams—dreams which seemed as certain to be realized as tomorrow's dawn and dusk, on Earth.

He did not glance into his rear-vision periscope. But had he done so at the proper moment, he might have seen a slender sword of incandescent flame limned against Saturn's tremendous bulk.

It might have been the fiery wake of any ordinary space-craft, building up speed. The rockets of vessels that navigate the ether are not continuously active during flight. They flame only when a change in velocity or direction is necessary; otherwise, in the frictionless void, no application of power is required. A ship can coast on at undiminished speed for an indefinite if not infinite distance.

Presently the nearing trail of incandescence died out. Bradlow had not seen it; and if he had, he would have thought only that one of his henchmen was on a scouting tour somewhere astern.

And then a little red light gleamed on his instrument panel. Someone was calling him by etherphone.

Switches moved in his grasp.

"The Ringmaster speaking," he drawled into the microphone inside his oxygen helmet. His voice was lazy and bored.

"You were a fool to let Ruzza and me live, Bradlow," came the words.

Though the Ringmaster recognized the speaker at once, he was not alarmed.

"So, Orethon?" he questioned.

"Yes, Bradlow," was the calm reply. "We have tricks up our sleeves other than the Esar shield. You did not know that we were carrying another invention to Titan—one which will render a space ship invisible. It is in operation now, my friend. You will notice, too, if you take observations with your direction finder, that the waves which bring this message to you come from a point of origin

which you will consider impossible. We have changed position, Bradlow. We are no longer in the Rings. We are clear of them, and we are coming toward you with intent to kill. How it is that we have moved, I leave you to guess."

The Ringmaster's laugh was low and scornful.

"I admire your nerve, Orethon," he said. "Probably I'd try a bluff, too, if I were one of the living dead, as you are."

NEVERTHELESS Bradlow turned his attention to a rectangular coil of wire, mounted on a universal joint. He pointed its axis in the direction of the place where Orethon and Ruzza should be, allowing for the steady rotation of the substance of the Rings. Then he watched the bobbing needle of a sensitive galvanometer. Its reading did not balance as it should with the strength of the incoming carrier waves, which, though Orethon was not speaking at the moment, were still being broadcast. Bradlow moved the coil experimentally, seeking the point of balance. And at last he found it, high up, clear of the Rings as Orethon had said!

A frown of worried puzzlement creased the Ringmaster's brow. What the young patrol pilot had said was obviously true in part at least. But that all of it could be true was of course impossible. And yet, who could be sure? For a moment Korse Bradlow felt a twinge of dread. Then, before him, against the star curtain of space, he saw the slender forms of seven fliers. Some of his followers were coming to meet him. Their presence served to banish the faint uncertainty which had touched his iron nerves.

Orethon's voice was speaking again in his helmet phones. "I believe that by now you have found that what I have told you is not entirely a bluff, Bradlow," it stated coolly. "I seem pretty sure of myself, don't I? Probably you've got a young space navy within call. You'd better yell for help, Bradlow."

The Ringmaster betrayed none of the fury the insult aroused in him.

"You want a show, do you, Orethon?" he questioned mildly. "Well, it'll be just a workout for the boys. Your wish shall be granted, trouble shooter!"

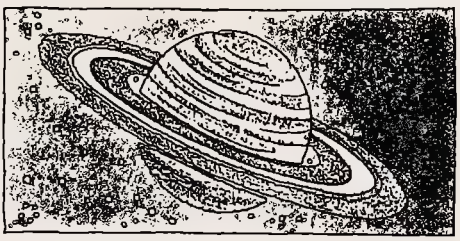
He changed the adjustment of his etherphone, and gave a sharp whistle into the mike. This was his signal for attention. A moment later he heard words of enthusiastic response coming from his henchmen:

"Arka reporting, Sire Ledrak reporting . . . Leilson reporting . . ."

Loyal Earthmen and Martians were answering the call of the Ringmaster.

"Fan formation!" Bradlow ordered sharply. "Watch for damaged flier of XL type. Blast out of existence at sight!"

He followed the command with a string of numbers which, in the terms of space navigation, indicated the po-



sition of Raff Orethon and Ruzza as nearly as he had been able to determine it with the direction finder.

The golden ship of the Ringmaster executed a quick hairpin turn, its rockets flaming. The seven other fliers followed like an angry horde. Sharp eyes were directed keenly ahead.

Minutes passed. The damaged craft bearing Orethon and Ruzza should be in sight now, but it was not. There was nothing near except a few drifting meteors, shadow-blotched in the contrasting lights of the sun and of Saturn and her moons and Rings. And meteors were too common here to attract more than momentary attention.

Bradlow was becoming nervous. Could there be any truth in what the insolent patrol pilot had said about an invisibility apparatus? He had scarcely given any credence to that

part of what Orethon had said before; but now he did not quite know what to believe.

HE heard nothing as tiny explosive projectiles drilled through the outer shell of his golden flier, for the vacuum compartments between its inner and external walls deadened all sounds which might have come from such a source.

Some moments went by as the time fuses of the projectiles burned. Then Bradlow saw one of the ships of his following burst apart with a dazzling flare of light. For an instant he felt a panic such as he had never before experienced. The atomic explosion which ripped his own craft asunder was too sudden and violent for disintegrating human senses to record.

By then the meteors had passed far astern. One of them was not quite what it seemed. Its Saturnward end had been hollowed out, so that a tiny cave was formed there. At the mouth of the cave a pair of rocket tubes had been welded firmly to the meteoric alloy, their muzzles carefully countersunk to minimize the possibility of their being seen. Through the opening above the tubes, the shortened barrel of a machine-gun projected.

Behind the weapon crouched a man, and beside him in the tiny cave they had carved out with blast-welders, was the grotesque shape of a Uranian.

Looking back through the mouth of their refuge, they saw several swift flashes of flame.

"Five, Raff Orethon!" Ruzza shrilled. "Four and the Ringmaster! We made sure of him and his gilded ship. He is dead, and the Esar models are destroyed. Bradlow's Circus will break up now, without his leadership. Titan won't even need the repulsion shield! Nice stunt—my 'invisibility' trick—wasn't it? Our rocket tubes practically turned this old meteor into a space-ship. And if you hadn't thought of using those time fuses on the atomic projectiles our friends probably would have spotted us and have burned us out of space. The first exploding ship would have put them wise. But we had those five as good as smashed before their pilots knew it. And the three that remain will never find us. The men at the controls will never guess the truth, simple as it is."

In response to this long speech, Raff only nodded laconically; but when he looked at the tiny Uranian, pronged and brown like an oversized burdock bur of his own native countryside, and yet, by some surprising whim of nature, humanly intelligent, there was in his eyes a new awe and respect for his weird companion. All his petty resentments were gone; and in their place was a feeling of real friendship at last.

RAFF glanced at his wrist watch, strapped over the fabric of his space suit.

"Continuing on our present course, we'll be within hailing distance of Titan with our etherphones within ten hours," he said. "We have enough oxygen to last until they send somebody out to pick us up. Meanwhile, what'll we do?"

"Talk about Earth, sing about Earth, and maybe sleep and dream about Earth," Ruzza replied. "We'll be going there soon, I think. The Commissioners will give you a leave with pay, I'm sure, for this Bradlow business. I'll be glad, because I always wanted to collect terrestrial butterflies; and you'll be glad because you'll see Miss Emily; and she'll be glad because she'll see you. Even all around, eh?"

Raff grinned genially behind the curve of his transparent oxygen helmet, and began to hum the tune of some ludicrous song. Ruzza joined him with rasping buzzes.

But beyond the maw of their meteor cave, the mad glory of Saturn's system was still visible, hemmed in by the black void and the sardonic stars.

Next Issue: BRAIN OF VENUS, a Mighty Novelette of a Ruthless Power's Mad Ambition to Destroy the Universe, by JOHN RUSSELL FEARN

LARNAK

"Madness on Mercury"

By Max Plaisted

In the year 2936, I set out in my space-plane in search of Earth people who had migrated from the Earth in 2328 A.D.

After incessant wars and a terrible plague, the Earth had reverted to a state of barbarism. My laboratory, in the Rockies, was the only haven of science on Earth. I believed that if I could find the descendants of the first migration from Earth, I might induce them to return and we could build up our planet anew.

Starting for the trans-Pluto planet, Urgo, I was hit by a meteorite which, sticking to my plane and plugging my rocket chambers, carried me toward the sun. I passed Venus and Mercury---and had given up all hope--when I was suddenly attracted into the gravitation of Vulcan--a small, undiscovered planet between Mercury and the sun.

Here, with the aid of metal-eating slugs, I managed to scrape off the meteorite. Exhausted from lack of food and water, I headed my plane toward Mercury and collapsed on the floor of my cabin.

I still lay unconscious on the floor of the cabin, as my plane dashed toward Mercury.

Luckily the dense atmosphere of Mercury retarded my fall---and the thick growth of tropical foliage eased the shock of landing. I landed on the edge of the dark side of Mercury! (Later I learned that only one side of Mercury faces the sun. That side is a burning, barren desert. However, around the center of Mercury there is a strip between the bright and dark side, where conditions are adaptable to life.)

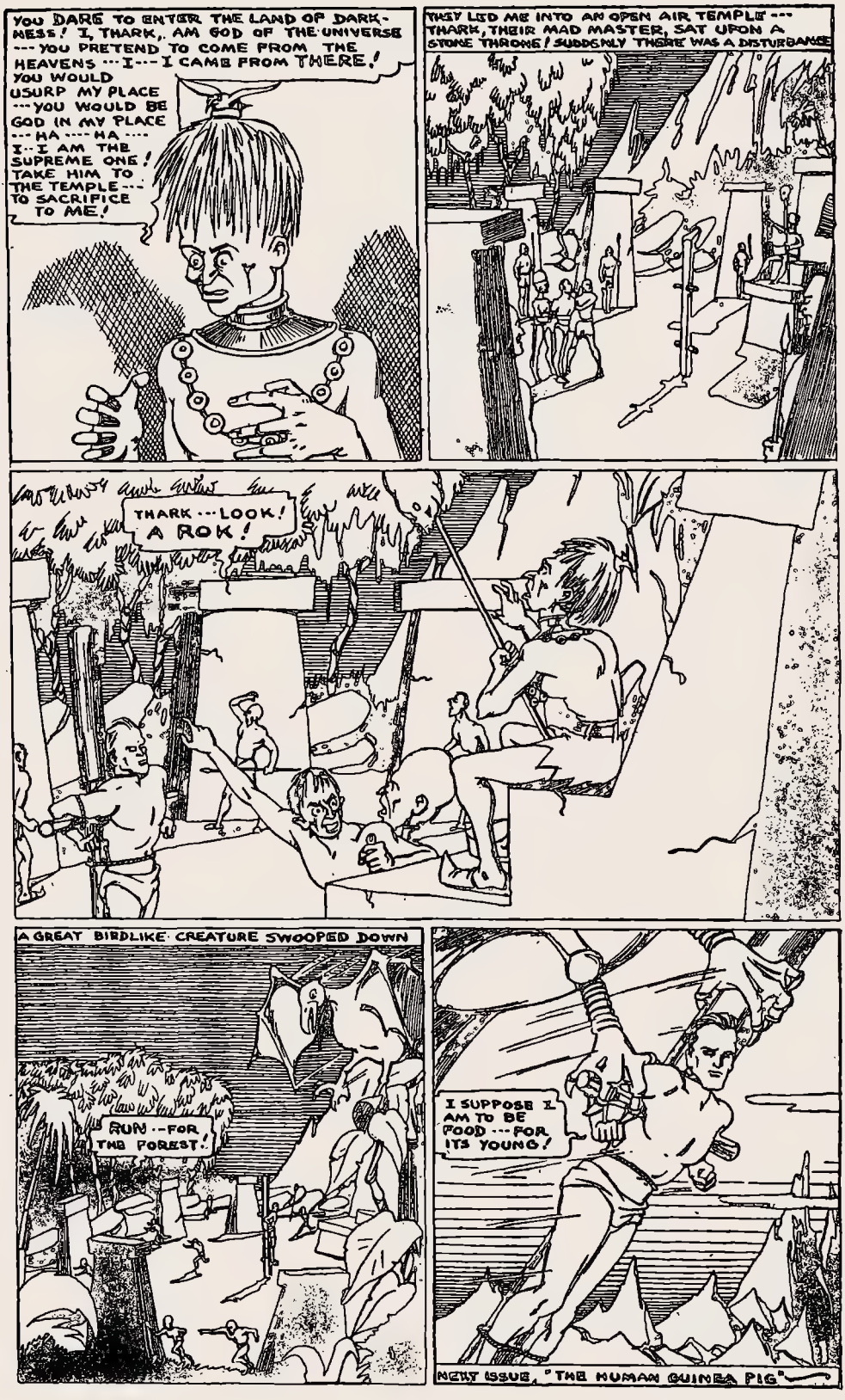
The shock of landing, brought me to

Quite a bump---ugh! Well, evidently I've arrived on Mercury!

Nice insects they have here--but I've got to get out---must find food and water!

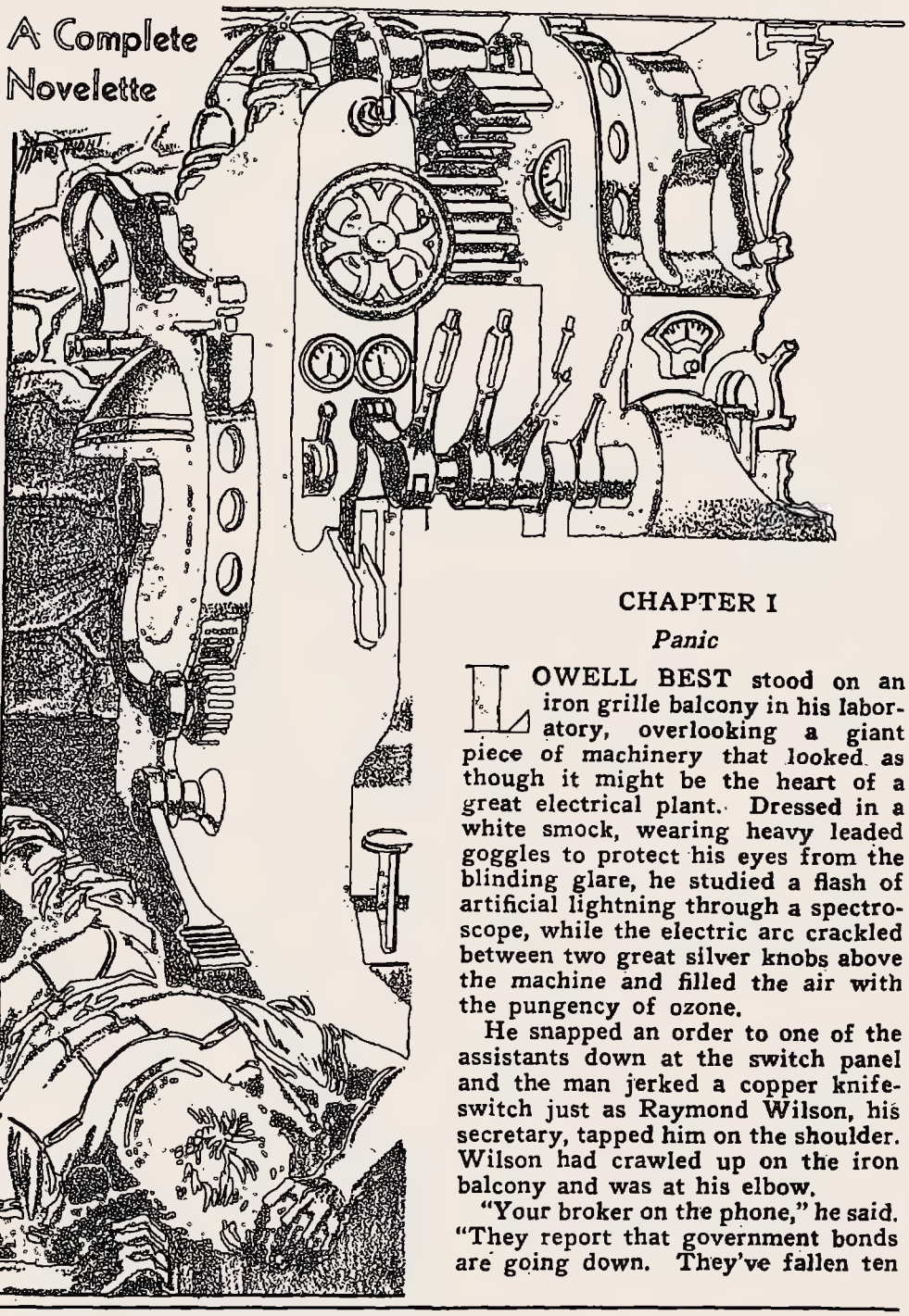
[Turn Page]

I OPENED THE TOP DOOR AND FOUGHT MY WAY OUT
I ATE SOME STRANGE FRUIT I FOUND GROWING NEARBY --- THEN FOUND A SPRING AT WHICH I QUENCHED MY THIRST. I FELL ASLEEP FROM EXHAUSTION
I AWOKE TO FIND MYSELF TRUSSED UP --- WITH A GROUP OF QUEER, STARING PEOPLE LOOKING DOWN AT ME. THEIR STRANGE GAZE SEEMED TO ENTER MY VERY BRAIN --- MY HEAD THROBBED! THEN SUDDENLY MY BRAIN CLEARED AND SOMEHOW I COULD UNDERSTAND THEM
COME --- WITH US!
THEY LED ME TO THEIR VILLAGE
WHO ARE YOU?
OH, GREAT GOD THARK, WE BRING YOU A STRANGE ONE!
I'M ZARNAK, AN EARTHLING ---- A FRIEND --- JUST SEARCHING FOR ----


YOU DARE TO ENTER THE LAND OF DARKNESS! I, THARK, AM GOD OF THE UNIVERSE --- YOU PRETEND TO COME FROM THE HEAVENS --- I --- I CAME FROM THERE!
YOU WOULD USURP MY PLACE --- YOU WOULD BE GOD IN MY PLACE --- HA ---- HA ---- I-- I AM THE SUPREME ONE! TAKE HIM TO THE TEMPLE --- TO SACRIFICE TO ME!
THEY LED ME INTO AN OPEN AIR TEMPLE --- THARK, THEIR MAD MASTER, SAT UPON A STONE THRONE! SUDDENLY THERE WAS A DISTURBANCE
THARK --- LOOK! A ROK!
A GREAT BIRDLIKE CREATURE SWOOPED DOWN
RUN --FOR THE FOREST!
I SUPPOSE I AM TO BE FOOD --- FOR ITS YOUNG!
NEXT ISSUE, "THE HUMAN GUINEA PIG"

THE ISLAND

A Complete Novelette



CHAPTER I

Panic

LOWELL BEST stood on an iron grille balcony in his laboratory, overlooking a giant piece of machinery that looked as though it might be the heart of a great electrical plant. Dressed in a white smock, wearing heavy leaded goggles to protect his eyes from the blinding glare, he studied a flash of artificial lightning through a spectroscope, while the electric arc crackled between two great silver knobs above the machine and filled the air with the pungency of ozone.

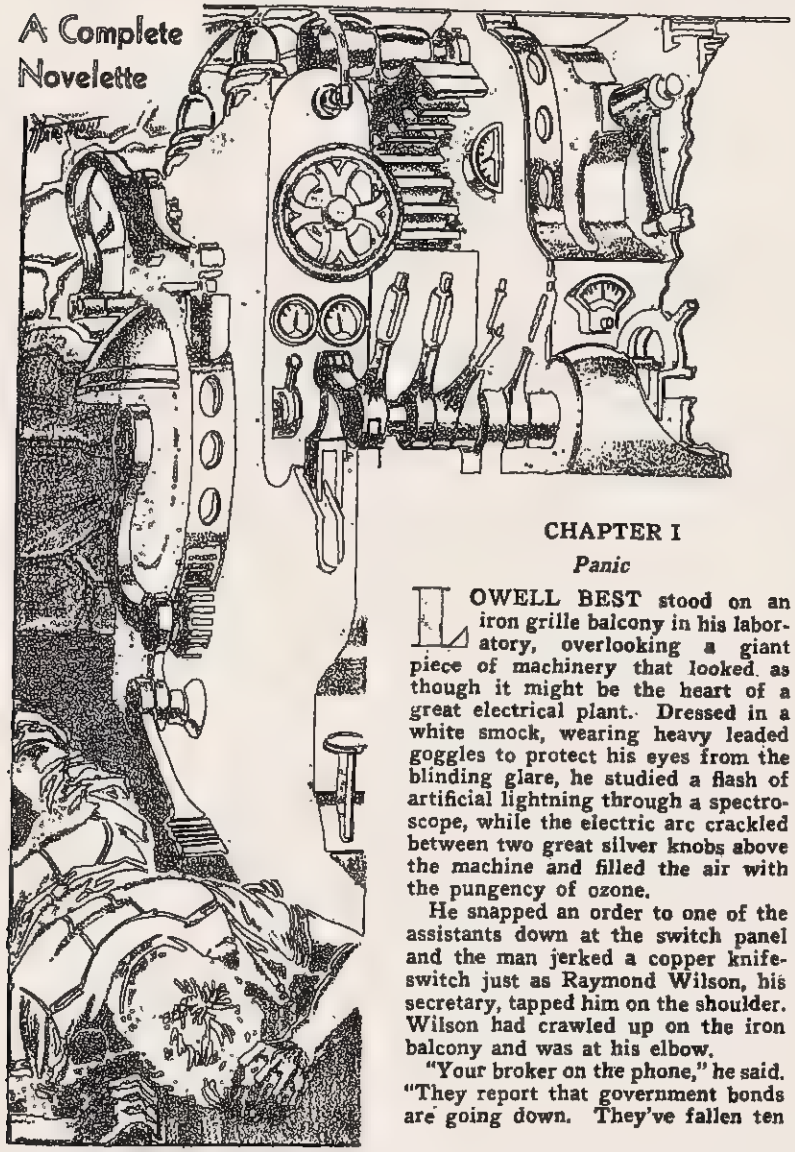
He snapped an order to one of the assistants down at the switch panel and the man jerked a copper knife-switch just as Raymond Wilson, his secretary, tapped him on the shoulder. Wilson had crawled up on the iron balcony and was at his elbow.

"Your broker on the phone," he said. "They report that government bonds are going down. They've fallen ten

A Monarch of Chaos Releases the Floodgates

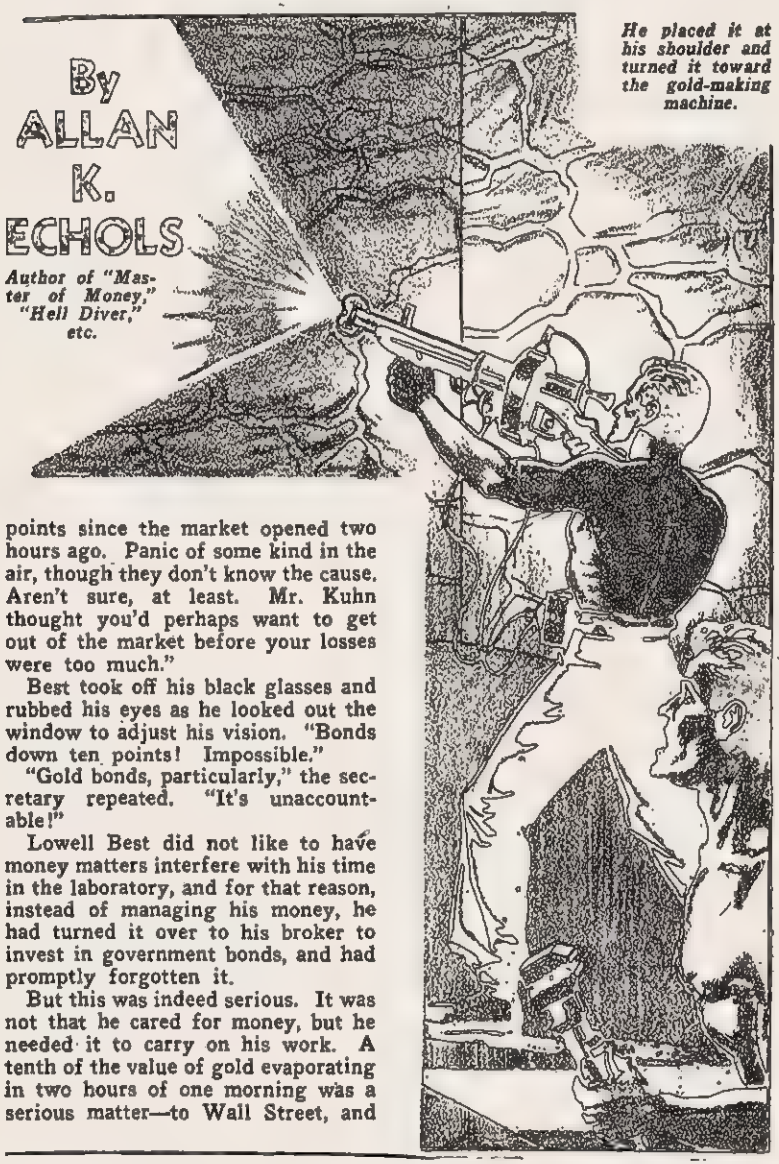
THE ISLAND of DOCTOR X

A Complete Novelette



By ALLAN K. ECHOLS

Author of "Master of Money," "Hell Diver," etc.



He placed it at his shoulder and turned it toward the gold-making machine.

A Monarch of Chaos Releases the Floodgates of Gold — and World Devastation!

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"Your broker on the phone," he said. "They report that government bonds are going down. They've fallen ten points since the market opened two hours ago. Panic of some kind in the air, though they don't know the cause. Aren't sure, at least. Mr. Kuhn thought you'd perhaps want to get out of the market before your losses were too much."

Best took off his black glasses and rubbed his eyes as he looked out the window to adjust his vision. "Bonds down ten points! Impossible."

"Gold bonds, particularly," the secretary repeated. "It's unaccountable!"

Lowell Best did not like to have money matters interfere with his time in the laboratory, and for that reason, instead of managing his money, he had turned it over to his broker to invest in government bonds, and had promptly forgotten it.

But this was indeed serious. It was not that he cared for money, but he needed it to carry on his work. A tenth of the value of gold evaporating in two hours of one morning was a serious matter—to Wall Street, and

# of DOCTOR X

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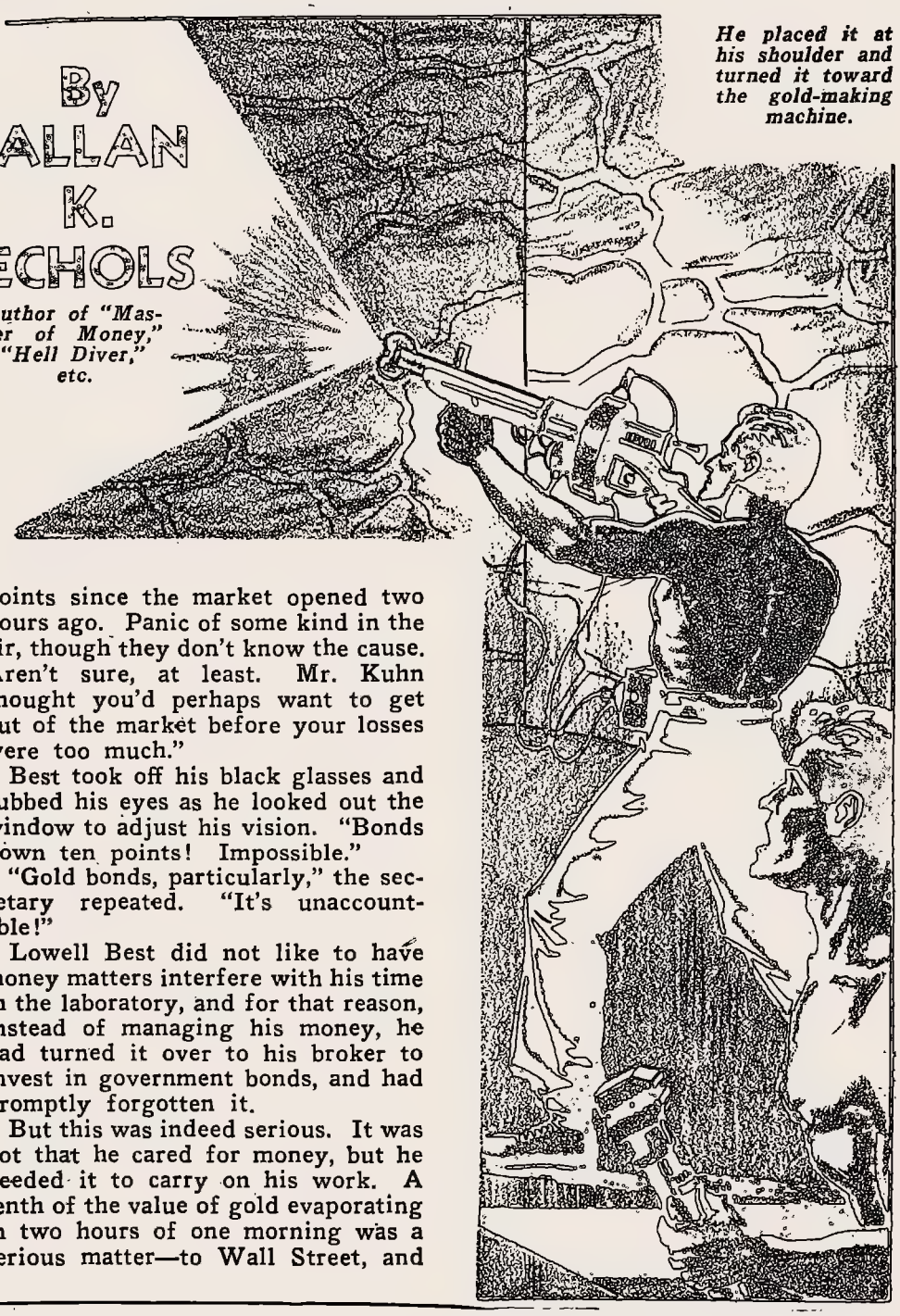

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of Gold — and World Devastation!

to the whole world as well as to himself.

He thought it over while gazing out the window. He said, "No! Tell Kuhn I will not sell. It is fear that makes these depressions. People run like rabbits—and frighten each other more—and the result is panic. I won't join in the stampede. What's this?"

The secretary followed Best's gaze out the window of the laboratory to the broad expanse of green lawn that surrounded the estate.

"Gyro," young Wilson answered. "I wonder who—"

"It doesn't matter who it is. I have a dozen guards to keep people from coming into my gates to pry around—so they drop in out of the air. Tell Murphy to see that the man gets that mechanical grasshopper off my lawn immediately and keeps it off."

AN airplane no larger than a coffin box, entirely without wings, with revolving vanes overhead and an idling propeller, drifted as lightly as a feather to the ground and stopped without rolling an inch.

A man got out of the tiny closed cockpit and was crossing the lawn before Murphy, the husky, red-haired ex-marine who headed the guards that patrolled Best's Long Island estate, could reach him. Best stood at the window and watched the two men. Instead of going back to his machine, the man followed Murphy, who turned and headed toward the house.

"See why Murphy is letting that man into the house," Best said to Wilson. "And tell him to go away. I can't be disturbed."

Wilson backed down the iron ladder and Best watched the men below, and, despite his efforts, could not get his mind on his work. There was something dreadfully wrong somewhere. The stock market news merely verified his own feelings. He wondered how Claire was.

Wilson was gone five minutes when he came back excitedly. "A man from the Department of Justice," he informed Best. "And he'll see nobody but you."

In his study, Best found the Government man waiting for him. The man was half a head shorter than the scientist, almost youthful, but with keen, intelligent eyes and alert movements. He showed his identification and introduced himself.

"I'm Dan Gregory," he said. "I was sent by the Department at the specific instance of the Attorney General's Office."

Best offered the man a chair and a cigar. He was not at all in an affable mood, nor receptive to any suggestions that would take time away from his laboratory.

"What's the trouble? I must remind you that I am not a scientific detective—nor a detective of any kind."

"I understand that," Gregory responded, not at all taken aback. "But may I ask you a question? Suppose, that, say, tomorrow, this country found all its money worthless. What would be the effect?"

"I hadn't given such a question any thought," Best admitted. "But offhand my answer would be that a condition somewhat like that during the bank holiday would exist."

"Not at all. Not at all," Gregory denied. "There was still credit then. People knew that it was only a temporary measure and that it would soon be over and things would right themselves. But suppose that suddenly no money was worth anything—nor ever would be again—until an entirely new monetary system was created. What then?

"I'll give you my own answer. Panic—murder—worse. Nobody's money would be worth anything. Money would not buy food because money would be worthless. People wouldn't sell on credit because there would be nothing of value to pay with. And when people can't buy food, they will steal it—riot and murder to get it as they always have done.

"They will sweep down streets and attack food supplies in great mobs as they did in the French Revolution and in the bread riots in Germany after the fall of the mark. People will not work at their jobs because there

is nothing of value to pay them with.

"That means no lights, no transportation, no running water. Fires will destroy cities. Hospitals will be unable to operate. Plagues will wipe out whole cities, whole nations—"

Best leaned forward, gripping the arms of his chair. "Just what are you getting at?" he demanded. "What is this picture you're painting—and why?"

GREGORY got to his feet, paced in excitement, his face white. "It is precisely the picture of what is going to happen to this country—to you and to me and to everybody in it—at any moment now!"

"What?"

"It is almost upon us—there are rumblings in Wall Street right now. In days—hours, perhaps—those rumblings will increase to a thunder that will devastate the world, that will sweep away the progress of all the thousands of years of mankind! And that is the simple truth."

Wilson, sitting to the left of Best, said, "Mr. Kuhn, your broker, told me over the phone that Government bonds—"

Best jumped to his feet. "What is it, Gregory? What do you mean is happening? What is the cause of this threat? What's the matter with American money?"

Gregory answered: "Gold! All money and bonds are of value only because of gold, all business is done because of the value of it. All negotiable paper, all credit, is good only in its relation to gold. When gold becomes worthless everything which represents a claim against it, even indirectly, also becomes worthless."

"That is true, of course," Best admitted impatiently. "And I agree that all the things you have mentioned might happen if gold were suddenly to lose its value. But, man, gold can't lose its value, because that is based on the law of supply and demand. There is only so much gold, and therefore it is precious—"

"That *was* the case," Gregory came back quickly. "But it is no longer the case! *Somebody is making pure gold!*"

"Making it?" the other echoed.

"Right! And in such quantities that it's only a matter of a short time until it will be as cheap as iron ore. That's the whole trouble. It's threatening to destroy the world. We're asking you to help us find who is doing it—and help us stop him—before he destroys civilization."

Best leaned over the desk before him, his head in his hands. "Making gold!" he repeated, more to himself than to anybody else. Then, with sudden decision, he said, "You're right. It would be a world catastrophe. I will do what I can—"

A strange, sepulchral voice interrupted him, coming, it seemed, out of the very air of the room. It floated all about the occupants, held them paralyzed, yet came from nowhere in particular.

"There is nothing you can do, Lowell Best. You are too late. This is one time in your life when yours is not to lead—but to follow. What the man has told you is true—but it is only half true. There is worse to come. This is Doctor X speaking. You will hear of me often in the days to come."

The voice died in a hollow laugh.

CHAPTER II

Weapons

WHEN that strange voice had subsided, young Gregory was already on his feet, a gun in his hand. His eyes darted around the room suspiciously, and then settled on Best.

"Where did that come from?" he demanded.

Best got up and opened a mahogany cabinet. "I haven't the least idea where it originated, but it came from the loudspeaker of this ultra-short wave receiving set. It's a two-way instrument. Perhaps I can find out."

He turned a dial and then lifted a hand mike that was built like one of the modern French telephones, having both a transmitter and receiver built into the one handpiece. He pressed a button, then waited with the

instrument to his ear. While he waited he explained:

"I usually keep this tuned in on my friend Doctor Dupree, who has a laboratory on Rock Island, off the coast of Georgia. He and I often—" He turned his attention to the phone. "Hello, Claire?"

He listened a moment to a conversation that Gregory did not hear, but there came a sudden scream through the transmitter, so loud that both Gregory and Wilson heard it.

Then there was silence.

Best shouted, "Claire—C l a i r e ! What's wrong? Why did you scream?" He looked about at the two men in the room, and there were deep lines of anxiety in his face.

No answer came to him and he repeated his call time after time. There was nothing but silence on the instrument, and finally, his face wet with perspiration, he dropped it onto the hook and turned to the men.

"There's something wrong on Rock Island," he said heavily. "Miss Dupree was telling me that she hadn't seen her father for a week, but that he often locked himself in his laboratory for that long. However, she had important business with him and when she tried to contact him she discovered, for the first time, that he hadn't been there for a week. It was at that point that she screamed—it was as though she were being choked off—and after that the instrument was silent. I'm going down there right now and find out."

Gregory put a sympathetic hand on Best's arm, trying to calm him. "I understand," he said sympathetically, "but you are forgetting this other business—"

"To hell with the other business," Best snapped. "You don't understand. Miss Dupree is my fiancée. I don't care what happens to the rest of the world. She comes first with me."

"But," Gregory insisted, "there is another point of view that you should consider. Your personal grief and worry will be great, of course, but, on the other hand, you have a far greater duty to civilization as a whole. I am sure that she would agree with me that it is the duty of any individual to sacrifice his personal feelings—even himself and those dear to him—for the greater good of mankind."

Best paced the floor like a caged lion, pounding the palm of one hand with the fist of the other. Deep lines of struggle within him marked his face. Suddenly he stopped in front of Gregory.

"Damn it," he said jerkily, "that's just the point of it. You're right."

Then suddenly he looked sharply at the officer. "Listen, man," he said tensely, "why didn't I think of this before? Here's something. That ultra-short wave radio is set on a secret wave length running up into the frequency of thirty-five thousand kilocycles. No one in the world would have *accidentally* stumbled upon the correct tuning to get me. He would have to *know* the frequency on which my set is locked. That means only one thing, that this Doctor X's voice could have come from only one sending set —Doctor Dupree's."

GREGORY looked at Best with startled attention. "I don't know the technical side of it," he answered quickly. "You mean, then, that the man who is in on this gold scheme is with your friend on his island?"

"Either has Dupree prisoner—or has killed him. Here's a theory we might consider. In confidence, of course. It is only known to Doctor Dupree and myself. The doctor has been working on experiments to prove that all matter in the last analysis is simply a form of electrical energy.

"Now suppose someone finds that out, someone who is himself a scientist. This might be his reasoning: If matter can be broken down into pure energy, then it is reasonable to suppose the reverse to be true, and that pure energy can be built back up into matter. In that case, energy would have to be converted into some certain kind of matter, some element. If you could construct an element out of energy, then you could control the nature of that element. Gold is an element. It follows then that were Doctor Dupree's experiments carried

out to their logical conclusion you could make pure gold *out of nothing.*

"Now, suppose some crooked scientist managed some way to get control of Dupree's work—you can see what the outcome would be. We know there's trouble on Rock Island, so that might be a possible answer. At any rate, the least we can do is to go there and find out."

"Then," Gregory speculated, "it looks as though the danger to Miss Dupree and the gold menace might be one and the same problem for us."

"Right you are," Best said with a sudden burst of energy. "We're going down there right now."

"Good," Gregory returned. "That gyro of mine will hold two, and make two hundred and fifty miles an hour."

"We don't wait for any such slow transportation as that," Best snapped. "We're in a hurry!"

He led Gregory into an adjoining room filled with curious instruments of glass and chrome steel and black bakelite, a storeroom resembling the factory of the makers of laboratory apparatus. He turned to Wilson as he crossed the threshold and gave him an order.

"While we arm ourselves," he said, "get the rocket ready; set the firing angle and check the fuel. And be sure to double-check your trajectory against the latest wind-velocity reading and barometric pressure. We can't afford to miss our objective an inch. Come on, Gregory."

In the storage room, lined with white enamel and lighted indirectly, Best went to a shelf that resembled a gun rack. There were lined up on the shelf half a dozen instruments that Gregory looked at with curiosity.

Each of the instruments resembled the stock and chambers of a submachine gun. But projecting from the cylindrical chamber which in a Thompson gun would have represented the cartridge case, and on this instrument was converted into a complicated series of electrical fixtures and a coil suggestive of an armature, there pointed a cylindrical glass tube eighteen inches in length and two inches in diameter. At the muzzle end of the hollow glass there was a silver, knoblike electrode.

BEST handed one of these queer guns to Gregory, along with a leather packet that clipped onto the belt like a cartridge case. There were tiny, silk-covered wires with nickel plugs hanging loosely like telephone switch-plugs from the box, another of which Best clipped to his own belt.

"And what are these for?" Gregory asked, bewildered, and examining the queer weapon by putting the stock to his shoulder and taking aim.

"That's a disintegrator gun," Best said, leading the way out of the room. "I haven't time to explain the details now, but it is a variation of the Coolidge tube. It works just like any other gun, as far as trigger and sighting action are concerned. It works whenever you push the plugs of those free wires into the generator box at your belt and pull the trigger. Be careful of it."

"Disintegrator? It looks like a disinfecting squirt-gun — something we were going to kill potato bugs with."

"Not potato bugs," Best answered grimly. "Gold bugs."

CHAPTER III

The Stronghold

"COME this way," Best said, leading Gregory through the lab and out the back door.

"What's this?" Gregory asked. "A coast-defense gun?"

He was staring at a platform of concrete, on which was mounted something that looked like one of the big cannon used in forts, except that the chromium-plated barrel was more than four feet in diameter and very short in proportion to its length. It was mounted on a revolving turret, and had the machinery to control its elevation and direction, all registering on dials on a panel on the side of the instrument. Wilson was working a mathematical calculator when they arrived.

Gregory commented, "I saw a man

shot out of one of those things in a circus once. Do we land in a net?"

"We just use that to get direction," Best explained. "We get into a rocket that is self-propelled, once it gets into the air. It is fueled with liquid oxygen and a firing device. You'll hardly know you were in it."

"I hope not," Gregory said. "I'm young—and have my whole career before me," he laughed.

"It will still be before you," Best assured him, glad to see that the young man faced his new experience with a sense of humor and without dread. Best's admiration for the youth jumped several degrees. "Rockets will be common modes of travel in a few years. They're perfecting the delivery of mail with them now."

Beside the rocket projector stood the rocket car, like a great chrome-plated shell with the bullet end pointed and made of some transparent substance like the windshield of airplanes. There was a door flush in the side, large enough to accommodate a man entering.

"In you go," Best said hurriedly. "Ready, Wilson?"

"Right, sir."

There was sufficient space inside the shell for Best and Gregory and their weapons. They stood on a spring floor while Wilson manipulated the shell into the cannon by means of electric carriages, as in the case of the ammunition for large cannon. The tops of their heads were close to the nose of the shell, and they could see out through the clear composition of which the nose was built. Best gave a signal.

Even inside the shell the hissing noise could be heard as the propulsion fluid was ignited. The *sh-sh-sh* grew louder in a gradual crescendo, like that of a giant skyrocket.

"Say, we're in the air," Gregory stammered. "Great guns—"

"You named it exactly. They are great guns. We'll be there in less than a minute."

Looking down out of the nose of the rocket they could see the earth's horizon receding as they sped upward in a high trajectory. Farms became mere checkerboard squares of different color, rivers became narrow silver or grey ribbons winding across the checkerboard. To their left and far below was a broad and slick expanse of turquoise blue, dotted here and there with vessels the size of corks.

They had hardly had time to look around when, before them and below, a tiny speck in the blue began to loom larger and larger, like a passenger engine approaching a news reel camera at terrific speed.

There was only time for one glimpse of the island when they were swallowed up by it, and bathed in darkness and in silence.

"Alcatraz!"

"Yes," Best answered. "Doctor Dupree's island is similar in appearance, and just as impregnable by ordinary means of entrance. He wanted isolation."

THE projectile had entered a hole, an artificially constructed target for the rocket, and plunged downward as the hole narrowed. As it sank and the hole became narrower, the force of the air that it compressed slowed it up. The hole ran downward under the sea, then curved upward, then dropped back sharply like the barb of a fish-hook. Thus the rocket followed its artificial path, slowing down under the pressure of the air it compressed, then came to rest, nose upward, just as an elevator with the cable broken might drop down its chute and land easily, due to the air forming a cushion for it.

Best opened the door and stepped out, followed by Gregory. They were in utter darkness. Best turned and placed a cautionary hand on Gregory's arm.

"Hook up your weapon, but don't use it until you see me fire first. I know all Doctor Dupree's household, and we don't want to kill any of them. Stay beside me."

Together they crept through a long, dark tunnel until Best bumped into a door. He groped through the darkness until his hand found the latch. Before

moving it, he held his ear to the door.

There was a low humming on the other side of the door, and underfoot he heard a strange thumping noise that he had never heard on any of his previous trips to the doctor's laboratory.

"The lab is on the other side of this door," Best whispered to Gregory. "And somebody is working in it. Have your gun ready and we'll break in. But be very careful—don't use the weapon until after I use mine. Ready?"

"Righto," Gregory answered tensely. "Let's get going."

Just as Best turned the knob of the door with a silent motion the hum of the machinery in the laboratory died down to silence.

Best cursed under his breath. "They must have heard us," he snapped over his shoulder. "Rush them."

He kicked the door wide and, with Gregory beside him, stood on the threshold of the laboratory.

It was empty of human beings. Dark, except a flame which burned with a still, eerie light under a glass retort shaped like a cannon ball. Out of the glass neck of the retort there came a pungent odor of steaming chemicals as the fluid bubbled within.

"They heard us and ducked, all right," Gregory commented.

The sepulchral voice of Doctor X came to them, filling the laboratory with a hollow and uncanny reverberation.

"We heard you, and you are welcome on this island," came the ironic words. "You will dispense with your weapons so that you may be greeted as visitors should."

Best jerked his weapon to his shoulder and whirled around, looking for the source of the voice. In his mind he knew that the owner of it was safely ensconced out of harm's way, but it was a reflex action that came to him naturally.

Gregory became a thing of fury. His own weapon was gripped at his hip by the butt and the hand grip. He crept forward with eyes squinted, peering through the gloom. The trigger finger of his right hand squeezed the trigger. He jerked very hard.

The gun remained silent—but a strange thing h a p p e n e d. There sounded in the still laboratory the shatter of glass, the puffing strange sound of smoke suddenly billowing out.

In the direction in which the silent gun pointed, following the sweeping motion from side to side as Gregory weaved forward, always in front of the gun's muzzle, there came smoke, the crash of glass, the hiss of steam, from the work benches that lined the wall.

The silent, deadly disintegrator was doing its work. Glass retorts full of chemicals exploded into a balloon of pungent steam, shattered glass, and then existed no more—left the work benches mere shadowy skeletons of what had stood there a second before.

Best saw the damage and shouted to Gregory: "Hold it. Take your hand off the grip of the weapon!"

The arc of the weapon touched the retort with the blue flame under it.

THERE came a shattering explosion that rocked the building. Heavy, black, rolling smoke rolled in great billows toward the two men, then melted as fast as it had appeared. There was a great gaping hole in the wall of the laboratory, and standing in the inside gloom they could see the bright blue of the ocean around them.

"That will be enough," came the weird voice that again filled the laboratory. "You are not very polite guests. Stop where you are and drop those weapons. No—lay them down carefully. I want to know more about them."

"If such a fiend ever got his hands on these things—" Gregory exclaimed.

He lifted his weapon high over his head to crash it to bits on the concrete floor.

Then he froze like a cast-iron statue, the hands over his head still gripping the gun.

Best turned and tried to follow suit. Gregory had seen the danger, and he was right. Best attempted to throw his weapon at his feet. He couldn't do it! He, too, was as paralyzed, as

still as though he had gazed upon the face of Medusa with the snaky locks.

A curse formed on his lips, he would have sworn aloud—but the lips would not move. They were in complete paralysis.

Not fright, but utter amazement seized Best, a feeling of utter helplessness so unreal that he could not believe it; his mind absolutely refused to accept it. His muscles strained and twisted, but for all the outer evidence of his efforts he might have been trying to get out of a block of solid concrete moulded to his very form.

Something inside Best told him that he was only making matters worse, that his only chance lay in getting control of himself and letting events take their course. He got a grip on his mind.

And then it came to him suddenly that he was completely in the power of the mysterious and unseen Doctor X. He knew now why he couldn't move.

And he would never move until the doctor was ready to release him.

There was a long period of silence in which Best and Gregory stood held in the grip of the invisible force that imprisoned them, their bodies racked by mere torture of being unable to move.

It was an exquisite form of torture, more terrible than any that might be inflicted by machines or other ingenious devices. And Doctor X was giving them plenty of time to realize their helplessness.

After what seemed ages the voice of the doctor again filled the room. "You should now be convinced that I am not to be taken lightly. And that it would be better for you to obey the commands that I give you than for you to try to fight me. I am going to give you a chance now.

"You are being held fast by a field of electrical force that paralyzes your muscles. As long as you are in that field you will be helpless, and I can throw such a field about you at any time and at any place I wish. Best, you will probably recognize this as the Steinach field. You probably saw the experiments at Schenectady. I tell you this to convince you of the futility of your trying to do anything about it—even with your disintegrating guns—which I want, incidentally.

"And now," the voice continued, "I am going to reduce the field while one of my men relieves you of the weapons. But be sure the slightest move on your part will cause the return of the field. It is impossible for you to do anything except give up your weapons. And, I might add, Best, that I have Miss Dupree at my disposal, and if you insist on being obstinate she will suffer for your foolishness. Think of her. Take their guns, Karlov."

Best felt his muscles relax as the field of electricity was reduced around him. His first impulse was to whirl on the man whose footsteps he heard behind him, and disintegrate him with the weapon. But he held himself back, not on his own account, but on account of the girl. She was in the mad monster's power, and he shuddered to think what would happen to her if he were dead. Alive, he had at least a chance to continue matching wits with the man.

HE gave Gregory a signal, and they handed their weapons to a gigantic fellow with unruly black hair who had come out of the door and stood behind them, reaching out his arms to take the weapons. When the man retreated with the guns and left them helpless, Best's heart sank. Now they, along with Claire and her missing father, were also at the disposal of this madman, who called himself Doctor X.

He looked at young Gregory, whom he had brought into this death trap, and he felt sorry for the youth who had followed, not on account of loved ones, but purely from a sense of duty. He had bravely risked himself in a world which was more than strange to him, a world of an almost unbelievable science where men fought with strange weapons; he had marched into that with a joke on his lips and determination in his heart. He was the stuff that heroes—and martyrs—are made of.

Gregory must have suspected what was going on in Best's mind. At any rate, he looked around, and then he smiled a crooked, but a very pleasant and youthful smile.

"It's one of the breaks," he said. "You pay your money and take your chances."

"Shame about you," Best admitted.

"What about yourself?" Gregory demanded quickly. "You have more to lose than I have. Thank God no girl was crazy enough to love me while I was in this game. It would only be misery for her. Where do we go from here, I wonder?"

"I don't even know *whether* we go from here," Best answered, returning his smile. "But anyway, I'm glad to have met you." He was trying to make light of it, and he offered his hand.

Gregory shook hands with him with mock seriousness. "Same to you, sir. I'll be seeing you some time—I hope."

CHAPTER IV

The Dungeon

ROCK ISLAND was a place of mystery, with only one dock where boats could be landed. The house that Doctor Dupree had built was constructed of solid stone—cut out of the rock—leaving fast underground crypts and subterranean rooms, where he carried on his experiments, and where Lowell Best had been the only man ever permitted to visit. And Best had not seen all there was on this island, as he now learned.

Best was stripped to the waist, standing in front of the strangest machine it had ever been the privilege of man to see, a work which had taken Dupree a lifetime of research and labor to build. It was his god, the thing he worshiped, and the thing to which he had dedicated his life.

Best had known about this work, and had kept abreast of the experiments. He had known when the Joliots, the son-in-law and the daughter of Mme. Curie, of radium fame, had first bombarded lithium atoms with alpha particles and found that the resulting collision had produced a boron atom and a neutron which totaled a greater mass than the combined original matter. They had, then, definitely *produced matter from pure energy.*

Following out these experiments, Doctor Dupree had succeeded in producing any element at will. The process was most complicated, but he had mastered it—and had kept it secret, realizing his obligation not to upset the equilibrium of the social world. He was a far-sighted man.

And now Lowell Best stood in front of the complicated laboratory mechanism, stripped to the waist and sweating like a stevedore, far down in the depths of the rocky base of the island. In a room off to the left young Gregory sweated and cursed over a hot stream of yellow metal that was guided into ingot-sized molds, each no larger than a brick—but a brick of pure gold.

Lowell Best, himself, was tending that strange machine!

When he and Gregory had submitted themselves to being made prisoners it was with the thought that as live prisoners they would have more chance to accomplish their ends than had they rashly put up resistance and been killed instantly.

They had been captured by a voice—but now they were being guarded by Karlov, the burly brute who had relieved them of and now carried one of the weapons they had brought with them.

They were not alone in the cavern. This guard stood over a dozen other men who slaved over the moulds into which the gold was being poured. He was gigantic in size, with black hair that fell tangled over shifty black eyes gleaming with his desire to use his new weapon on his prisoners.

Best was sweating over his machine when the brute came up to him and watched him work, leering at him. "How do you aristocrats like doin' real labor?" he sneered. "'Tain't so good, bein' a nursemaid to a machine, eh?"

Best wiped the sweat out of his eyes with the back of his hand. "I have al-

ways worked over machines," he answered. "I like them."

"Bah!" the man snarled. "You rich guys don't know what labor is—slavin' to make the rich richer and the poor poorer. Well, it won't be much longer—then you'll work for your grub like us workin' people—or else you'll starve. The likes o' you has been rulin' the earth long enough. It's our time now."

"Yes?" Best answered, with an element of doubt in his tone.

IT was apparent that the man wanted to boast, and Best encouraged him. "How are you going to bring that about? People usually get just what they're worth in this world."

"So you think," the man answered. "But you'll see soon enough. Doctor X has got it all figured out. You birds make gold the most important thing in the world. And now you are going to make it the *least* important thing in the world. You make gold—we throw it away! We take it out and drop it from airplanes in every town in the country. Pile it up by the side of the road—give it away to whoever wants to pick it up. Soon it won't be worth pickin' up. Then where'll you be?"

"Where?" Best asked, knowing full well the disastrous answer.

"The world's gone too far—and power is in too few hands," the anarchist answered. "The rest of us are slaves—now. But we won't be for long. We're going to destroy the machine age—destroy everything—and start all over. Then everybody has the same chance as the rest. There won't be no bosses—no laws, no nothin'."

"I see," Best answered with a casualness he did not feel.

"We're real anarchists. There's a hundred of us here with the doctor. He's the biggest one of us all. When we get through there won't be no law at all—except what we make. Everybody will be his own boss—"

"Who got up this idea—Doctor X?"

"Sure—he thought of the way to work it. He was a great scientist—but the world didn't give him no credit. Now he'll be the boss of it—make 'em eat out of his hand."

"In case this scheme of yours works," Best said to the guard, "your crowd will suffer just like the rest of the world. You won't be able to get food any more—"

The man laughed derisively.

"What do you think we been preparing for?" he demanded. "This island's all been hollowed out, and there's enough food and everything else a man needs stored here to last us a good ten or twenty years."

The man extended the disintegrating gun that they had captured from Best. "See this weapon you brought?" he gloated. "Well, the doctor and a crew tore one of them up and seen how it was made, and now they are making more just like it. The hundred of us armed with them things can control the whole world—*we'll* be the bosses. We got poison gas so strong that a whiff of it will wipe out an army. We got things nobody ever dreamed of."

Best felt his heart sink as he realized that the man was painting a picture that was, if anything, less awful than what would really happen if their plans worked out. Even now, he knew, the first breath of the holocaust was sweeping the world. Something had to be done before that insane mob went out into the world with those deadly weapons.

"What you say might be true," Best said with casual unconcern. "but it won't work out. This gold-making machine's already wearing out. That gear inside there is cracked now from the heat. In half an hour it will fly apart and wreck the whole thing. Then where will you be? Your dream will be blown higher than a kite—when this machine stops!"

The big man's brow darkened and his eyes showed the depth of his concern as his slow mind digested the significance of Best's statement. "Where's the break?" he demanded suspiciously, looking at the gear Best pointed to.

"In your head—ox," Best gritted, sending his balled fist like a hammer that landed on the back of the man's

neck at the base of his brain. The man groaned, sank to the floor unconscious.

Best dived, caught the weapon before its fragile glass could be shattered on the floor. In a trice he had the generator box at his own waist, as he called loudly to Gregory.

The Government man joined him, grimy and breathless, looking more like a stoker from the hold of a ship than the person he was.

Best gripped the weapon and aimed at the door that led into the other quarters of the castle.

"Let's go," he snapped. "We're going to stop this thing right now—or be stopped. Coming with me?"

"Am I?" Gregory shouted, grabbing up a monkey wrench, the only weapon he could find. "Lead on, Macduff," he said. "A monkey wrench was made to use on nuts."

CHAPTER V

Chaos

BEST gave his disintegrator gun a hasty inspection. He placed it at his shoulder and turned it toward the gold-making machine.

"That goes first," he said. "It's the gadget that's causing all the trouble."

He pulled the trigger.

Gregory gasped and rubbed his eyes. Silently, without a sound, the thing happened. It was a miracle. At one second the machine was grinding away with its maze of gears. The next second it wasn't there—there was nothing but a small coating of grey dust on the concrete floor.

They looked at the place where it had been, and there was a great sense of relief in them.

"All right," Best said: "Now we'll go and give our regards to our host."

"Here's hoping he don't say, 'The same to you,'" Gregory said.

Best stood spraddle-legged before the stone wall that had kept them prisoners in the dungeon with the machine. He triggered the weapon, aiming it like a fireman handling a fire hose. The wall crumbled to dust before the power of the gun, leaving a gaping hole that opened up before a tunnel.

"Up that flight of stairs to the left," Best ordered. "He will probably be in the machine shop — making those guns."

The sudden sound of footsteps clattered behind them, and they saw that the rest of the dirty prisoners had dropped their work and followed them. Gregory signaled them to follow silently, and the bedraggled mob fell in, and they all went up the hall, silently, on shuffling, tired feet. Best halted them before a door, waited until the little crowd was behind them.

The men stood with whatever makeshift weapons they had been able to find in a hurry, wrenches, hammers, iron rods. On their faces was grime—and the desperation of slaves to whom a strike for freedom was worth the risk of life itself.

"Ready, men!" Best snapped, aiming his weapon at the heavy iron door in the stone wall.

Before their eyes, to the audible gasp of the men behind them, the stone wall crumbled under the power of the gun, the loose stones from above dropping to the floor as though an earthquake had struck the building, leaving a ragged hole in the masonry, wide enough for the mob to crush its way through.

They poured in behind Best, into the brilliantly lighted and humming machine shop, where the anarchists toiled over their deadly weapons in the making, under the direction of a lean man with bushy white hair.

"Doctor Dupree, *himself!*" Best cried.

It was indeed his old friend. But a changed man. The white-haired scientist whirled at the sound of the interruption. and there was a gleaming light of madness in his eyes.

"You!" he cried.

"Right," Best snapped. "Get out of the way. I'm destroying those things!"

The old scientist shrieked: "Never! You are not! I've worked all my life to get control of the world. You're not going to stop me when I'm right on

the verge of my inevitable success."

He dived for the electric-field weapon which lay on the bench beside him, the white tail of his smock straight out behind him. Best took deliberate aim and pulled his trigger. The scientist's hands clutched at a pile of dust on the bench—the instrument disappearing just as his fingers started to tighten about it.

THE room burst into confusion. The shouting, cursing anarchists made a concerted dash for a rack where a dozen of the completed weapons were stacked in a long row, like so many glass-barreled machine-guns. Half of them had got their hands on the weapons and were strapping on the generator boxes when Best finished with the scientist.

Feet squarely on the floor, the cold grim purpose of death stamped on his face, he gave only one look at this aggregation who had already done so much toward destroying the world. Then, as though they were so many destructive rats, he turned his gun full blast on them.

There were shrieks and cries and the ravings of men who knew their doom was upon them. But Best hardened his heart and held the gun true. It was over quicker than the eye could see. The men were crowded around the gun rack at one moment—and the next moment there was neither man nor gun rack. There was nothing—except a gaping hole in the wall that let in the pure white sunshine. A hundred deadly menaces to life were no more.

Doctor Dupree rushed over and stood before Best, his face ablaze with insane fury.

"Damn you," he shouted. "Once again you have won out over me. I've secretly hated you all my life for just that thing—you always beat me. The world has given you every honor—me nothing. I would have destroyed it and you too, and have been master of what was left—would have built my own civilization as it ought to be. But you've won again—even won my own daughter from me—"

A new voice entered the shop, a voice that was musical in spite of the pain in it, the voice of a girl:

"Not your daughter, as you made me believe. I've just learned from your diaries that I was only your wife's daughter. She was a widow and I was only a year old when you married her. You shouldn't have held me prisoner in your private office, nor have left a letter-opener within reach for me to escape with."

Best spun around, stood still in astonishment. Claire Dupree had joined them, her clothes torn to ribbons, the frayed ends of cords tied tightly around her wrists, but now raggedly severed, and other severed cords on her ankles. She rushed into Best's arms.

Best held her closely, his heart drowned in gratitude that she was still alive. He buried his head in her lovely hair, and tears of relief came to his eyes.

Suddenly Doctor Dupree sprang, jerked the weapon out of Best's free hand, turned the muzzle in an arc toward the embracing couple. Someone, among the silent prisoners behind them, uttered a loud, warning shout.

Best tried to free himself. The gun muzzle was almost upon him.

Gregory braced himself, heaved the monkey wrench through the air and caught the doctor squarely on the temple with it. The iron thumped against skull bone, then clattered to the floor.

The grey-haired man slumped downward, like a pole-axed steer, red blood matting his white locks.

He lay still, dead from a fractured skull.

"I said a monkey wrench was made to use on nuts," Gregory observed. "Where do we go from here?"

"We let sea water flood that gold cavern," Best answered, "and destroy everything else about the place—except just enough of that gold to make a ring."

"A ring?" Gregory repeated, puzzled.

"Yes—a wedding ring."

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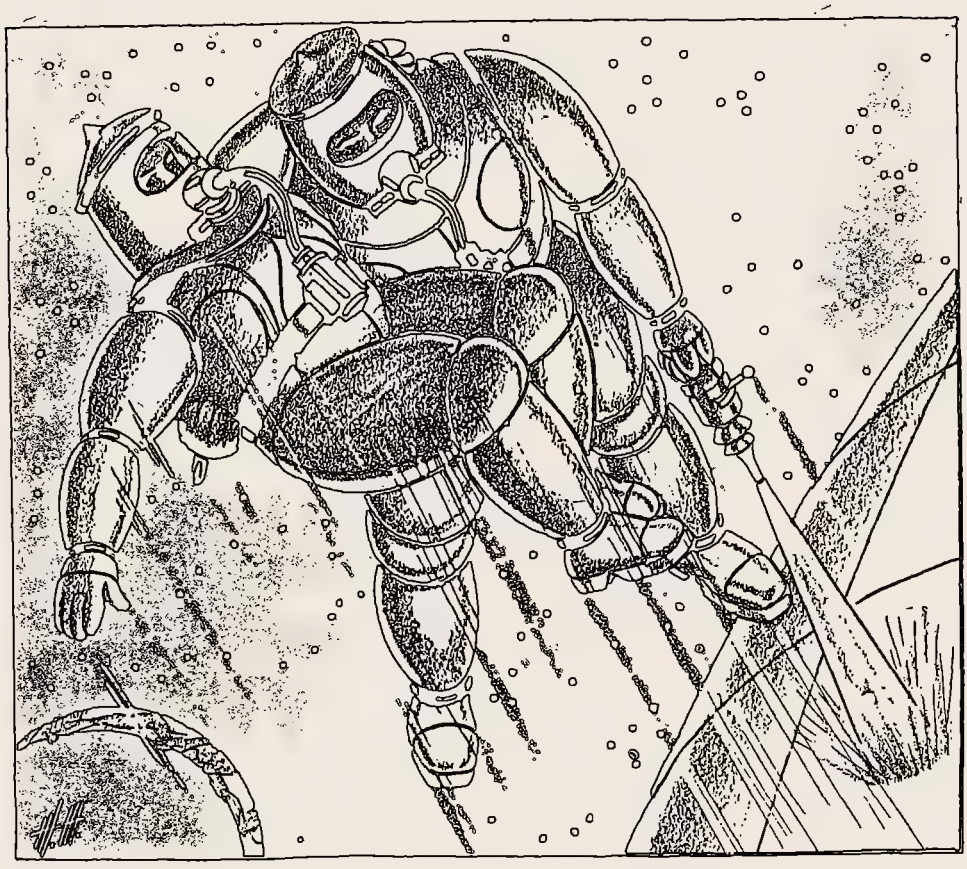
EARTH-VENUS 12



We clung close together, two bloated figures

Through the Abyss of Interstellar Space a Doomed Rocket Ship Carries its Cargo of Human Menace!

By GABRIEL WILSON

Author of "The Stolen Spectrum," "The Tide Tyrant," etc.

"YOU'VE never seen Nona Guelph?"

"No," I said. "I never have seen the lady."

"Well, here she comes. If she isn't a beauty, I'm a motor-oiler."

From the forward turtle deck, under the glassite dome of the *Starlight Arrow*, I peered down to the landing stage where the arriving passengers were crowding. It was *Interplanetary Starways*, Earth-Venus Voyage Twelve.*

Nona Guelph was beautiful. Tall and slender, with hair like spun gold piled in a cone upon her head. A long dark cloak enveloped her as she came with armed guards from the escalator.

In the shadows of the turtle deck just beyond the blue glare of the Mor-

* Starlight Arrow, Great-New York. Earth to Grebbar, Venus. August 2036.

rel tube-lights young Walter Wilson stood beside me.

"A beauty? Am I right?"

"No argument on that," I agreed.

As she came up the boarding incline her cloak parted, disclosing her slender form, brief kirtle of blue, with a golden-tasseled belt, and her limbs like pale pink marble. Wilson's leather jacket hid the little Banning heat-gun which he held alert in his hand. This daughter of the President of the World Federation was surrounded by uniformed guards. Young Wilson, Federal undercover man, was an added precaution, assigned for this voyage which was taking Nona Guelph, traveling alone, to Grebbar to be guest of the young daughter of the President of the Venus Free State.

She reached the deck, and Wilson stepped forward. "Miss Guelph? I am Wilson—Federated Newsgatherer."

I saw a look pass between them. The uniformed guards had remained on the dock. One secret bodyguard, as everyone knows, is more effective than ten in blatant uniform. Wilson's leather togs, and the Federated Newsgatherer's insignia on his peaked cap, was an effective disguise.

She knew he was her guard, of course. Her smile was gracious. Radiant. It made my heart thump as though I were an isolated tower timekeeper who had never seen a beautiful girl before.

"Federated News?" she said. "Even in space must I be interviewed?"

"I'll be generous," Wilson grinned. "Not till we pass the moons of Venus will I ask you a question. Meet Ken Masters—"

I gripped her cool slim hand. Her blue-eyed gaze roved my white linen, gold-braided uniform—the insignia of my rank striped on my sleeve.

"Third officer?" she said. "I am honored." Then suddenly her smile faded. Her hand went to Wilson's arm. Her voice was low, furtive. "That Venusian down there. See him? His name is Felah Bartano."

WE saw him. A gigantic fellow, for a native of Venus. Black hair, long to the base of his neck, with a red leather thong binding his forehead in Venus fashion. He was starting up the boarding incline, a passenger this voyage.

"You—watch him, Wilson," Nona murmured. "I'm—afraid of him. I have—"

"Easy!" I warned. "Eavesdroppers—"

Wilson had a detector in the palm of his hand. No hostile eavesdropping ray was upon us. But Nona abruptly added,

"After the evening meal come to my deck-chair." Her gaze included me; and then, as Captain Davis was approaching to welcome her, she turned from us.

For a time my duties as Third Officer of the *Starlight Arrow** kept me busy. We left the Great-New York stage at 5 P.M. Earth E. S. T. The sun was setting at the western horizon; but it rose with us as we slanted westward in our climb through the atmosphere. An hour's ascent, with our rocket-tails streaming like a comet behind us; then we shut them off, with the gravity plates set for Earth repulsion and the Moon to pull us on the first leg of the flight.

The usual number of passengers suffered from pressure sickness—the inevitable changes of temperature and air pressure, despite Captain Davis' skill in handling the *Arrow's* mechanisms. But everything was all right once we passed the stratosphere and entered interplanetary space.

For an hour or two that evening the sunlight raked us full. Then, with course shifted, we headed for the Moon and plunged presently into

* The Starlight Arrow was a cylindrical alumite hull a hundred feet long and forty feet at its central breadth. Upon the turtle deck, a fifty foot superstructure, ten feet high with a narrow deck space around it, housed the public rooms and the passengers' cubbies. Upon the superstructure roof was the radio room; the officers' quarters forward; and facing the bow peak, was the big circular control room. Over the whole of this was the glassite dome, a convex, transparent cover from stem to stem.

In the hull were the crews' quarters; the galley; pneumatic mechanisms operating the plate-shifters of the hull's gravity plates; the pressure equalizers; chemical air renewers; ventilators—all the intricate mechanisms necessary to the navigation of space.

The personnel of Voyage Twelve, by official records, was officers and crew—18; passengers, 41—the latter the usual mixture of Earth and Venus people, with a few Martians.

Earth's conical shadow. Glorious black firmament with blazing white star-dots; the Moon a glowing white disc and Venus a blazing point of light far off to one side, over our port quarter.

I did not see Nona Guelph during the dinner hour. Her cubby was in the superstructure forward, almost under the control turret, with a little segment of the side-deck under the dome roped off for her exclusive use. Nor did I see young Wilson.

The Venusian, Felah Bartano, went directly to his cubby and stayed there. But I saw him again briefly as he came to the deck to stare at the firmament through a side bull's-eye—a fellow as tall as myself; thirty years old perhaps. Grey-skinned, like all Venusians, his erect, muscular form robed in a long dark cloak. A commanding figure.

At 7 P.M., ship's routine, I was momentarily free of duty. I saw Nona come to her little deck space and seat herself in a chair. The white glaring moonlight was on the other side-deck. The shining starlight bathed the girl's blue-clad figure with a silver sheen. She saw me, and beckoned me forward.

Her smile was radiant. Anyone observing us would have said that she was a young girl intrigued by my so-called handsome figure and gold-braided uniform. But her tremulous voice belied that radiant smile.

"Where is Wilson?"

I answered her smile; and as I sat in the chair beside her suddenly I felt as though unseen eyes must be watching us.

"I don't know," I murmured. "I haven't—"

Then abruptly, like a materializing apparition, Wilson appeared, coming from a nearby corridor doorway of the superstructure. He sat smilingly on the arm of my chair.

"My business is to watch you, Miss Guelph," he said softly. I saw the little detector in the palm of his hand. He said, "Tell us now what you meant—"

"That man Bartano," she said hurriedly. Then she told us that when the daughter of the President of the Venus Free State had visited her in Washington last conjunction they had talked of the revolution in the Dark Country of Venus, which was threatening her father's government. That revolution had grown to be a real menace now. Its leader was demanding Earth recognition of his government—an important thing, for with it would come the legal right to import munitions of war from Earth—those diabolical electronic Earth weapons which the scientists of Venus and Mars never have been able to duplicate.

"THIS man Bartano," Nona was saying vehemently, "I'm sure it is the same man who was watching us that day in Washington. A native of the Venus Free State—but a traitor—a spy of the Dark Country."

"You think so? Well, I'll report it to Captain Davis. We'll—"

"Easy," Wilson said. "Now look here, Miss Guelph—"

"And did you know," the girl added, "that on this voyage our cargo is supposed to be the usual freight, but in reality it's weapons of war for the Grebbar government to use against the Dark Country revolutionists?"

That confounded us. I knew it, of course, but that this girl should know it was startling—though reasonable enough, for she had heard it from her father.

"Well, I'm a motor-oiler," Wilson swore. "You tell us that, so openly. You're not very discreet, young woman. It's lucky no eavesdropping ray—"

Suddenly he was staring at the little detector in his palm, jaw dropping. Wilson wasn't to blame any more than myself—the beauty of this girl had distracted us both. The needle of the detector stirred! Eavesdropping vibrations were upon us—someone was electrically listening to our murmured words!

In that shocked instant we all three sprang to our feet. Wilson had his little heat-gun in his hand.

"Someone—forward," he murmured. The needle of the detector registered

the direction—toward the triangle of the bow deck where, fifteen feet from us, ladder stairs led downward into one of the hull corridors. The moonlight glared on the ladder kiosk. No one in sight there.

I went with a leap, and Wilson was after me. The blue-lit descending ladder was empty. Then suddenly, in the shadows under the kiosk, I saw a blob. It moved. Wilson's Banning gun spat its bolt of electronic heat. But I had knocked up his wrist so that the invisible stab hissed harmlessly against the metal kiosk roof with a shower of tiny red sparks and the smell of burning paint. He was being too impulsive.

And in that second I had the crouching culprit by the throat. He tried to toss his eavesdropper away, but I seized it.

"What's the idea?" I demanded. "Don't you know this is illegal?"

"Y-yes, Mr. Masters. But I didn't mean any harm."

He was one of our crew, a young American-born fellow named Brown. This was his second or third voyage with *Interplanetary Starways*.

Then Wilson grabbed him. "You were listening to us?"

"Y-yes, sir." He was thoroughly frightened, white and chattering. He gasped, "I didn't mean any harm."

"Oh, you didn't? You heard what we said—"

"Yes—no, sir. You caught me too quick."

"Just curious?" Wilson said ironically. "For no reason?"

"Yes, sir."

I took a look out the kiosk opening. On the dim side-deck Nona was standing, staring forward to where Wilson and I had vanished from her sight. There had been no alarm. The man in the control room evidently had thought nothing of our dash for the hull ladder. The forward lookout, gazing through his telescope, had not seen us.

I turned back to Wilson and his prisoner, who was gasping.

"Stop, please, you're hurting me!"

"You don't want to talk, eh?" Wilson was twisting his wrist and cuffing him in the face with the Banning gun. "Well, there are short-cuts."

Wilson fumbled at the equipment belt under his shirt. The young deckhand stared.

"W-what are you going to do?" he chattered.

"Gonna hang your tongue in the middle and wag both ends."

Brown's eyes bulged as he saw the hypodermic. "You—you—"

"Your tongue will loosen all right," Wilson said grimly. "Hold him, Masters. Just a jab in his arm."

THE serum went in. Within a minute the panting Brown sank to the floor-grid, with Wilson kneeling beside him.

"Now—you're all right?"

"Yes—I'm all right. You said—"

"I didn't say anything. You're the one who's got to talk."

"Me? Sure. Everybody talks. Only they told me I mustn't. I said I wouldn't an' I won't. Because they said if I didn't talk I'd be rich. We'll put the passengers off on an asteroid —Serena, it's called. Its orbit is sloping out—a flat eliptic—I guess the passengers will starve—"

"Wait a minute. Let's get one thing at a time. Who told you you'd be rich?"

I stood for that minute or two, listening to Wilson's tense questions and Brown's babbling answers. Rambling truth, but we could piece it together very easily. Nearly half our crew had been bought by the Venus revolutionists! A mutiny impending now—the *Starlight Arrow* to be seized by Felah Bartano—officers and loyal members of the crew to be killed. Passengers to be marooned, the *Arrow* taken to the Dark Country of Venus, its cargo of scientific weapons invaluable to the revolutionists, who soon were to attack Grebbar. Half of our crew members, plotting this brigandage now! And among the passengers, nine armed Venusians, all capable of handling the *Arrow* under Bartano's leadership! Wholesale murder, awaiting Bartano's signal!

I gasped. "Why—good God, Wilson—we must tell Captain Davis!"

Too late! From the kiosk doorway I saw Nona still standing, peering toward us. There was a sudden tinkle of breaking glass on the deck near her. A darkness bomb! Its liquid, anti-chromatic gas sprang into a diffusing vapor, with a puff of inky darkness enveloping all that segment of the deck. Nona's figure vanished, blotted out in the blackness. But her scream sounded; scream of terror, suddenly muffled as though a hand had been clapped over her mouth.

Then hell broke loose all over the ship.

The details of what happened during that terrible half hour on the doomed *Starlight Arrow* can never be told. There is no one to tell them. For myself, I recall that I leaped into the blackness of the light-absorbing gas, toward where I had heard Nona scream. But there was no one; nothing ponderable here save the solidity of the side bull's-eye into which I bumped with my wild rush. The impact all but knocked the breath from me, so that I stumbled and fell.

From the blackness there was a chaos of sounds. Running footsteps, panic-stricken voices, screams of terror, and screams of agony; the hiss of heat-bolts, the sizzling of electronic hand-rays. Then above all the near, and the distant turmoil, the *Arrow's* danger siren suddenly was screaming —shrill, ascending electrical whine, like a giant in anguish.

Within a second or two I was again on my feet. Wholesale murder everywhere. I could hear it. In the control room above me there was fighting. A flash. A wildly-aimed Banning stab of heat sizzled down past me, so close that I could feel its torrid radiance. Above the din came Captain Davis' voice from the control room, shouting orders—and defiance at the mutineers.

"Back, you hyenas! Down from there, or I'll drill you!"

And then he was roaring: "Masters! Ken Masters! Go below! The engine room! The lower controls!"

THE gas around me was dissipating a little. I could dimly see the captain on the turret balcony, with a weapon in each hand. Suddenly his bulky figure slumped forward, hung for a moment over the rail—then fell and crashed almost at my feet.

"Go below the controls!" The instinct to obey made me whirl. I was unarmed. In the dead captain's hand was a Banning gun. I seized it. Half a dozen men dashed by me in the gloom. Friends or enemies? I could not tell. I did not fire.

It was futile to look for Nona in all this turmoil. For a second I thought I saw her; but it was Mac, the ship's surgeon. He seized me.

"Ken—good God!"

"Ordered below!" I gasped. "Come on."

We leaped for the little kiosk. But a heat-stab drilled Mac and he plunged to the deck. I bent over him.

"Mac—"

"I'm—finished—" The blood of a drilled aorta gushed through the burned hole in his chest and he was gone.

At the kiosk a man plunged into me —and, friend or enemy, I drilled him; leaped over his body.

Brown was here, still babbling.

I plunged down the stairs looking for Wilson. Overhead I heard someone slam the iron door of the kiosk. The main hull corridor was like a catwalk—narrow suspended metal grid, with low rails. Doors opened into the side cubby compartments.

I stood for a moment peering into the blue-lit gloom. The stirring air currents were fresh, of normal pressure. I could hear the swish of the circulating fluids in the double shell of the hull — the Erentz pressure-equalizers, absorbing our inner air pressure, without which the alumite hull would have exploded, our air puffing out into the vacuum of space.

All the vessel's mechanisms still were working. Silence down here, with only the dim muffled sounds of the overhead turmoil floating vaguely down.

No one here. I passed a body, lying on the catwalk. A steward. His throat was slashed. Then as I ran toward the big central control room I heard a soft call: "Masters!"

It was Wilson. Panting. Disheveled. Banning gun still in his hand.

"Masters!" He gripped me. "What became of Nona Guelph? That darkness bomb—"

"I don't know. I couldn't find her. Captain ordered us down here—"

"I thought I saw someone dragging her into the kiosk. I came down—nobody here—alive— I was wrong. She must be still on the deck—

"I've got to get to the lower control room," I gasped. "I was ordered—"

I ran, with him after me. The catwalk terminated at the control room door. It was ajar.

"I was here," Wilson panted. "Nothing—just—"

We burst in. A blue-lit interior, twenty feet square. Hydraulic pressure tanks, levers for emergency operation of the gravity plates, dials, levers and switches in banks around the walls. Our chief engineer and his assistant should have been in charge here.

They lay sprawled on the grid floor, unconscious.

"No sign of her here," Wilson said. "What's aft? I don't know the layout of this damned place. You'll have to show—"

In all the turmoil Wilson's mind was only on the girl he was hired to protect. He whirled from me as an audiphone here on the wall buzzed its shrill signal.

"I'll take it," I said. I seized it. "Hello? Ken Masters—lower controls."

It was Spellman, the radio man, calling from his tiny cubby amidships on the roof of the superstructure. He could see all the upper section of the vessel from there. The brigands were in full control. He gasped when I told him that only Wilson and I were alive down here.

"They've closed every hatch, Masters. You're trapped down there. They've got the decks—the turret control room—passengers all herded aft—what's left of them."

"Spellman—you send a call for help. I'll shift the plates, head us back to Earth—"

"Can't send a call — radio's smashed—" Through the audiphone I heard a whizz as though a heat-bolt had sizzled up there in the radio cubby. And Spellman gasped, "Almost got me. I'm the—only one left fighting. They'll—"

His voice faded back; I heard his defiant shout.

I called into the instrument: "Don't fight! Surrender—no use in getting killed—"

BUT he did not hear me. At my side, Wilson stood tense.

"They've got the ship?"

"Yes. Only us—"

Suddenly there was a blob moving here in the blue-lit dimness of the mechanism room. A crouching man at the doorway. Wilson's gun and mine spat their heat-bolts. But too late! The man in the doorway flashed a tiny bolt of radiac-electrons. Wilson fell; electrocuted, his clothes and his flesh blackened, with a ghastly smoking stench. The impact knocked me sideward, with my Banning gun clattering away! Then I leaped; and the crouching man rose up, hurled his empty weapon. It missed me.

Then we locked together; fell on the grid-floor, rolling. It was one of the new crew members—a small, grey-skinned Venusian. No match for me. I caught his thin throat. Choked until he went limp; then I lifted him, bashed his head against one of the steel vacuum tanks until his skull cracked; and with a wave of nausea sweeping me I flung away the body.

In the sudden silence I stood panting. Alone here in the bloody shambles of the mechanism room. The audiphone to the radio cubby still was open. I called,

"Spellman! Spellman—"

I could hear vague sounds up there. Then Spellman came.

"Masters?"

"Yes! I'm here."

"Finished me—drilled—"

"What about Nona Guelph — where—"

"In the—turret control room. That Bartano—he's got her in the turret. I'm—finished—Masters—"

His gasping voice faded back. I

heard the thump of his body falling.

Then silence. I stood panting. What could I do? Yield to these brigands? Or set the gravity plates here into combinations which would swing us back toward Earth? Of what use? Bartano's men would come down here after me. Perhaps I could hold out for a time; kill a few of them.

Or should I rush up to the deck? The hatches were barred; but suppose I could find one open? All futile. I'd be killed the moment I reached the deck.

Then from down the catwalk I heard voices—Venusians of the brig-and crew—half a dozen of them. Coming down to take possession of the mechanism room. Of what use to try and fight them?

I ran aft through the mechanism room. From the aft catwalk a metal ladder led downward to the base of the hull. A pressure-porte exit down there. A little cubby with emergency apparatus.

What I might do flashed to me. Wild, desperate plan, but I could think of nothing else. I heard the tramp and the voices of the brigands in the mechanism room now; the buzz of the audiphone as Bartano called down to them from the control turret. Like a cat I went down the little ladder.

The pressure porte was in the keel —a ten-foot cubical room, with an upper sliding trap door. I dropped into it; slid the door closed over my head. Emergency pressure suits were here in racks on the wall. I seized one of the largest, donned it. Strapped the chemical air-renewers around my waist; clamped on the helmet.

THE suits were racked into small bundles. I took a second one under my arm; and in my gloved hand I held a cylinder of the emergency repulsion ray.

The pressure-porte here had a sliding outer trap in the hull base. I did not stop to exhaust the air in the little room; I merely slid the trap open an inch or two. The air went out with a whining hiss. Then I slid the trap wide.

Amazing void here at my feet! Black firmament of space. Blazing points of light from stars far down. Sternward, I could just see a limb of Earth—gigantic crescent segment of disc, stretching yellow-red, half across the firmament.

For an instant I paused; and then I leaped. Weird sensation. It was like thrusting myself into water! The force of my leap sent me downward perhaps ten feet. Sluggish, slackening fall, with my body slowly turning. Then the gravity of the bulk of the *Starlight Arrow* drew me back. I struck the hull; clung there with a tenuous hold as though I were a wafted feather.

[*Turn Page*]

WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by This Questionnaire

1—What is the approximate distance between Earth and Mars?
2—On what substance is all life based?
3—Is a chicken immune to tetanus?
4—What is the mathematical symbol for infinity?
5—Is there anything known to present-day science which will act as a barrier to electricity, wireless, cosmic rays, and the sun's radiations?
6—What have the names Mimas, Rhea, Titan and Tethys in common?
7—What is one form of static?
8—What are the four planes of Space?
9—Give a definition of the atom.

(A Guide to the Answers will be found on Page 121)

Inch by inch I crawled up the hull-side. Up? There was neither up nor down! The hull was a convex surface under me; the black firmament and the stars were everywhere else. I came, like a crawling fly, to the glassite dome. Would the brigands notice me?

The dome was translucent, but transparent only at the bull's-eyes, and I kept away from them. The deck, tilted sideward, was a blur under me. Then I was on the dome-top. The control turret merged with the dome; there was a tiny pressure-porte cubby, big enough for one or two people at a time.

I reached the outer slide. Still no alarm. Through the tiny bull's-eye I could see the cubical space under me now. The inner trap was closed. I opened the outer one. The cubby air came out. Then I dropped down; closed the slide over me. The turret was directly under me now. Ten foot, windowed, circular room. The trap beside which I was crouching was in its ceiling; a drop of fifteen feet down to its floor. There was no bull's-eye in this trap. I could see nothing but a blur through the translucent glassite.

Very cautiously I slid it the merest fraction of an inch. The turret air came hissing to fill my tiny cubby. Would the hiss, or the upward air current, be noticed? I crouched tense, unarmed save for the steel hook welded into my glove.

Still no alarm. In a moment my cubby was filled with air. I doffed the helmet; shut off the suit mechanisms. At once I heard voices from below. Bartano's voice, gloating.

"You look so frightened, little Earth-bird!" he said suavely.

"Those passengers," Nona panted, "are you going to—keep on killing them?"

"Oh, no. I killed no one—except when it was necessary. They will be marooned—but not you, little Nona. You are too valuable to me—a hostage, so that your government will recognize our Dark Country. We need Earth's help—"

I slid the panel a little wider. I could see the huge Bartano now, standing at the main control switches. And Nona across the room, backed against the wall, with eyes blazing, her face pallid, her golden hair a disheveled mass on her shoulders.

Then abruptly Bartano moved toward her. "Your beauty fascinates me, little Nona. I am master here. Master of everything—even you—"

His huge arms went around her. She struggled; screamed, but his hand clapped over her mouth. In that second, I dropped.

WHAT followed was a blur of chaotic horror. It may be that in the terror of his death, the murderous Bartano had only the wild thought of taking everyone else into oblivion with him. Or it may have been an accident.

For myself, I only know that as I dropped, I saw Bartano cast Nona away and lunge at me. I swung my arm. The pointed steel hook of my glove struck his neck, sank deep as I twisted and wrenched. Then it came free, bringing with it the flesh and the arteries of his throat—and a torrent of his blood.

He staggered, but still for an instant kept his feet. I stood staring, numbed by the grisly sight of him. And in that second, he lurched, half fell upon the main control table, deluging it with his blood, his arm making a wild flailing sweep, scattering the fragile glass controls. . . .

There was a flash. A hiss of deranged, short-circuited c u r r e n t. Spreading derangement. A hiss here. Then with the flashing speed of electricity, an explosion down on the deck where now the brigands were shouting in horrified amazement.

Another second. An explosion, dim and muffled came from the hull. The doomed little *Starlight Arrow* burst outward.

I saw through the turret window that the dome over the bow-peak of the deck was buckling, cracking, a rift with outward rushing air. Brief seconds of chaos—men screaming now—the hiss and surge of escaping air, mingling with their screams.

Bartano's body lay in a welter on the wrecked controls, with the blue aura of free electrons streaming from it.

I seized Nona. "Hurry! This ladder—"

A ladder lead up to the overhead port from which I had dropped. I got the girl up it. The air was thinning; we gasped; choked in the electrical fumes and the stench of Bartano's burning body.

"Hurry—hold your breath, Nona! These fumes—"

I suppose within a minute I had her garbed and helmeted. I saw, in those last seconds, the whole bow-peak of the dome explode outward, with a litter of human bodies and wreckage hurtled into space.

I flung open the cubby slide. The air blew us out—two bloated figures, clinging together. Gravity would have brought us back, but I flung the stream of repulsive electrons from my hand-cylinder, turned them [illegible] wrecked vessel so that we were s[illegible] away from it. Slowly at first, then with accelerating speed.

We clung together, bloated helmeted figures, almost weightless in the void. The great crescent limb of Earth seemed below us. The wreck of the *Starlight Arrow* was above our heads, half a mile or more now, and rapidly receding.

Ghastly derelict of space! It lay broken, slowly turning; and around it, myriad little satellites slowly revolved—fragments of wreckage, and human bodies. Then presently the derelict was only a tiny gleaming speck of stardust. And then it was gone.

Earth's gravity was pulling us now. Soon we would be falling like meteors. But in the stratosphere the repulsion electrons of my hand cylinder checked us, so that at last, through the atmosphere we wafted gently down.

Sole survivors of Earth-Venus,

—age 12.

FORECAST for the NEXT ISSUE

JOHN RUSSELL FEARN, the noted English writer of science fiction, contributes one of the headliners in the next issue of THRILLING WONDER STORIES. His novelette, BRAIN OF VENUS, is a mighty story of a power supreme and its ruthless ambition to destroy the entire Universe. Nothing could stop "The Brain" once it set out to disrupt the Solar System, annihilate matter itself. Until one Earthman guessed its secret.

* * *

The earth, whirling in its orbit, suddenly plunges into a black, nebula-like mist! What happens afterward, as related by masterful DONALD WANDREI, makes one of the most fascinating pseudo-scientific stories of the year. Wandrei's BLACK FOG shows you just what takes place when evolution comes to a stop!

* * *

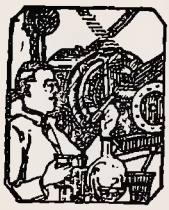
JACK WILLIAMSON is also represented in the next issue—which will contain his latest novelette, THE ICE ENTITY. It's a powerful story of an amazing invasion of the polar wastes by a new kind of intelligence, and the grim aftermath. Surprise follows surprise as the story unreels and builds up to a great climax with the world in the balance.

* * *

INVADERS FROM THE OUTER SUNS, by FRANK B. LONG, Jr., is the type of interplanetary novelette for which you've been waiting. A breathless story of science exploring the cosmos!

* * *

All these, and many other entertaining stories by your favorite writers are scheduled for the next issue. In addition, many other features, plus another installment of ZARNAK and more SCIENTIFACTS.



Science Questions and Answers

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to promise an immediate answer in every case. However, questions of general interest will receive careful attention.

ORGANIC COMPOSITION

Editor, Science Questions and Answers:

I remember reading somewhere that up until the middle of the last century, scientists could not prove that living matter was composed of non-living matter, but that today it is proved. How can this be proved? Can modern scientists actually take ordinary matter and make out of it living matter?

L. B.,
Pompton Lakes, N. J.

To answer your last question first, modern science *cannot* create living matter. But the gulf between mineral (non-living) matter and organic matter, of which living matter is formed, has been crossed. Whether the final step will ever be made, no one can today say—the final step of creating *living* organic matter. However, science has gone a long way toward showing that protoplasm, the stuff out of which our body cells are made, is completely composed of the same identical atoms that make up rocks and ores and salt deposits. A great many of the ingredients that go to form protoplasm have been synthesized in the laboratory. Those as yet unattained may eventually fall before the attack, for not yet have chemists and biologists come against any sort of blank wall in their efforts to find out what living matter is.

An interesting series of experiments easily performed by the chemist shows the relationship of protoplasm to mineral matter. Starting out with calcium carbide and water, both mineral substances, he produces acetylene. This he combines with sulfuric acid and other reagents to get acetic acid, alcohol, and acetone. Combining the two former he makes ethyl acetate. Then he dissolves the ethyl acetate in some of the left-over alcohol and treats it with sodium metal, another purely mineral substance. This process of "ketonization" gives him a variety of products, each of which has the ability to absorb chlorine and bromine, both mineral substances. These chlorinated and brominated by-products can be made to hook up in long chains, forming bigger and bigger molecules, till the chemist finally has sugars and amino-acids and simple proteins, all of which are found in protoplasm. Thus, starting with purely mineral substances (the calcium carbide, by the way, is made from lime and coke) the biological chemist, employing only heat and life-destroying acids, finally comes up with organic matter, which though still as "dead" as ever, is close enough to the true life-matter to be able to be absorbed by it, whereas one cannot eat coke or lime or sulfuric acid. The problem of creating laboratory life consists now of building up the extremely complicated hormones which seem to give to protoplasm its strange quality of "life." Ed.

ATOMIC PHYSICS

Editor, Science Questions and Answers:

I would like to ask your Science Questions and Answers Department this: what is the very latest discovery in atomic physics? That science seems to progress the most rapidly, so I am wondering if there has been anything startling uncovered recently in that field.

N. S.,
Worcester, Mass.

The physics of the atom undoubtedly does change or progress the fastest. Since its inception with the discovery of radioactivity in 1894, we have heard of such amazing things as radium, protons, electrons, the miniature atomic solar system, the interchangeability of matter and energy, artificial transmutation, and hints at atomic power. Although the latter is still hypothetical, the diligent men who take atoms apart bit by bit are forging ahead steadily in that fascinating field of what lies in the micro-world.

There has been a recent development, dated as late as 1934, that has brought up a tentative theory to account for the strange fact that a radioactive element emits beta rays (electrons) at varying speeds. Since the atoms emitting them are of uniform composition, and all have the same initial energy, this casting off of slow and fast electrons was against that bulwark of science—the law of conservation of energy. Speculation ran rife, but only recently has it been credited that there may be a thing called a "neutrino" which makes up the strange difference in the energy-equation. The basic equation giving its function is:

NEUTRON (equals PROTON plus ELECTRON plus NEUTRINO)

The experiment that lent weight to this supposition put forth by Pauli, an Italian physicist some years before, was performed by Curie and Joliot in 1934. They bombarded aluminum with

alpha particles (high-speed helium atoms from radium) and obtained an isotope (companion element) of phosphorus, called "radiophosphorus" because it was unstable and in three minutes turned to silicon. It was found that the radiophosphorus, in changing to silicon, gave off positrons, or "positive electrons." The only way the equation could be balanced, and in fact the best way, was by assuming the existence of "neutrino" particles which had zero mass but carried definite charges from the unstable radiophosphorus.

But "neutrino" is as yet not a recognized citizen of the atomic world. Only further experimentation will give it this desirable status. One might carry the analogy further and say that it has applied for its citizenship papers and is waiting for them to come through. Ed.

PLANETARIUMS

Editor, Science Questions and Answers:

What is a Planetarium? Living in a small town as I do, I've never seen one, but have heard of those in New York, Chicago, and Philadelphia. Do they really show the heavens as clearly as one sees them out in the open air, and how is it done? I would like enough information about them to write an article for our local paper.

S. A. K.,
Whitefish Bay, Wisconsin.

Space does not permit us to give detailed information of Planetariums, but you may write directly to the Hayden Planetarium in New York and procure their booklet describing same. However, we can answer one of your questions by saying that a Planetarium shows the heavens *more* clearly than the naked eye, for it duplicates conditions that exist on only favored spots of the earth's surface at rare intervals—no clouds, no exterior light, no atmospheric disturbances, and no visibility limits. Furthermore, it can show the stars as they would look while the sun is shining, the aurora borealis to people of the south, the dome of stars from any position on Earth, as for instance the North Pole, and the positions of the planets at any date in past and future history—all visually.

The machine that does it is an electrically operated, dumbbell-shaped light projector which spots more than 2,000 star-images on a half-spherical dome of metal, plus the five planets visible to the naked eye, the sun and moon, with their separate motions among the stars.

The illusion is quite as real as the actual heavens and far more instructive, for the machine can show the motions of the stars and planets in a much shorter space of time. One hour in the planetarium is equal to perhaps a year of actual observation. For instance, the canopy of stars can be made to revolve in 3 minutes instead of the actual 24 hours. To illustrate the movements of the planets in the star field, the month can be cut to a half minute, so that the moon sweeps across the screen and exhibits all its phases in fifteen seconds. Further acceleration of time can so speed up planetary motions that Mercury will oscillate past the sun like a shuttle, Venus like a firefly, and even slow-moving Saturn will weave among the stars rabbitlike, accomplishing a motion in a few minutes that would in reality take years.

The modern Planetarium is the most remarkable educational device to be discovered in several generations. Ed.

COMET'S TAIL

Editor, Science Questions and Answers:

What is the composition of a comet's so-called tail? And for that matter, just what is a comet?

J. S.,
Bronx, N. Y.

A comet is perhaps the most mysterious of celestial objects in the solar system. Comets have had more attention from the people of Earth in all history than any heavenly bodies save the sun and moon. Of 900 recorded, about 400 have been visible to the naked eye. And some notable visitations of comets have produced more of a blazing spectacle in the sky than the moon itself. Briefly, a comet is a body of the solar system, subject to the sun's gravitation as are all the planets and asteroids. But by far the greater number of comets swing around the sun in a hyperbolic orbit. Such an orbit is open at one end so that after one visitation, the comet disappears forever. Exactly why this happens is not known.

The best known comets are the short-period ones which revolve around the sun in periods of a few years, swinging as close to it as 300,000 miles, and retreating as far as the orbit of Neptune. They are observed time and again. Encke's Comet (named after its discoverer) was caught on photographic plates 35 times to date, and will apparently appear every 3 1/3 years as long as the solar system exists.

Halley's Comet has been observed and recorded 29 times since 240 B.C. It is one of the brightest and most dependable of comets, so much that the ancients saw reason to mention it in their writings. The comet itself is an amazing creation. It consists of a nucleus of solid, planetary material ranging from 10 miles to 500; a head of gaseous or dustlike stuff anywhere from 10,000 to a million miles in diameter; and a tail of extremely rarefied matter that may attain the astonishing length of 100,000,000 miles! Since the tail is affected by light-pressure and hence always points away from the sun, it must be composed mainly of tiny particles and widely separated.

Their constitution is not known, except that traces of cyanogen gas, carbon monoxide and hydrocarbons have been detected. Yet large and bright and conspicuous as they are, all comets are ridiculously small in mass. It is doubtful that a direct collision with a comet would jar the Earth enough to change its yearly revolution more than a few seconds. Ed.

Send Your Queries to

EDITOR, SCIENCE QUESTIONS AND ANSWERS

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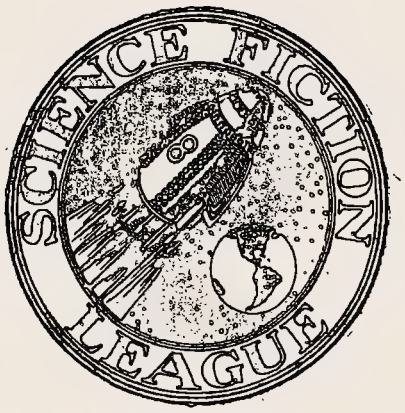

The SCIENCE FICTION LEAGUE

A department conducted for members of the international SCIENCE FICTION LEAGUE in the interest of science fiction and its promotion. We urge members to contribute any items of interest that they believe will be of value to the organization.

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SCIENCE Fiction is here to stay! Today there are literally hundreds of thousands of adherents of science fiction scattered throughout the civilized world. *And yet, the popularization of this variety of literature is still in its infancy!* The movement is akin to the state of amateur radio before broadcasting appeared: the radio amateur movement then was confined to a few thousand earnest young men who pursued the new art as a hobby.

The great public did not come into radio until broadcasting arrived in the early 'twenties. A similar condition prevails in science fiction today. The movement still has not reached the great public, but efforts are made by all science fiction enthusiasts to spread its vogue from year to year. The motion pictures have already been converted, if only partially, to science fiction, and a number of excellent films on science fiction have been presented to the public at large. But much remains to be done as yet.

MEMBERS, BE ACTIVE!

The purpose of the SCIENCE FICTION LEAGUE and THRILLING WONDER STORIES is to spread the appeal of science fiction in the most energetic manner all over the country. This, however, can only be accomplished by our thousands of LEAGUE members.

By word of mouth in the school and classroom, by getting new readers to read science fiction magazines, by inducing motion picture corporations to run science fiction films, by getting broadcast stations to broadcast science fiction, etc., the movement can be made to take tremendous proportions in the years to come.

A MISSION TO FULFILL

The founders of SCIENCE FICTION LEAGUE and the editors of THRILLING WONDER STORIES sincerely believe that they have a great mission to fulfill. They believe in the seriousness of science fiction. They believe that there is nothing greater than human imagination, and the diverting of such imagination into constructive channels. They believe that science fiction is more than a form of entertainment. They believe that it can become a world-force of unparalleled magnitude in time to come. Its influence on the progress of future generations may be furthered by LEAGUE members throughout the world.

PRIZE LETTER CONTEST

How would you like to own an original science fiction illustration by our artist, M. Marchioni? For the best letters (not more than three hundred words long) on the theme, "What Can I Do to Promote Science Ficton?"

the editor will give out Marchioni originals as prizes.

Send your letters in at once, as the supply of drawings is limited. The most interesting letters will be published in this department from time to time. Sincerity and practicability will count most.

JOIN THE LEAGUE

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There are other domestic Chapters of the LEAGUE, fully organized with regular meetings, in the following cities. Addresses will be furnished upon request by Headquarters to members who would like to join some local branch. Chapters are listed chronologically according to charter:

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12—36

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ENGLAND

G. H. Miles, 34 Lambert Rd., Brixton Hill, London, S.W.2; William F. Fulcher, 10, Royal Hospital School, Holbrook, Ipswich, Suffolk.

NEW CHAPTERS

Under the Directorship of Frederick Stephen Reckert, the Terre Haute Science Fiction League Chapter, of Indiana, wishes to announce its organization. Together with charter members Don Graham Stuart and Miller Davis, this Chapter holds regular sessions wherein free-for-all discussions of science fiction and science are encouraged. Readers of THRILLING WONDER STORIES residing in the vicinity of Terre Haute, Indiana, are invited to join this Chapter.

CHAPTER NEWS AND GENERAL ACTIVITIES

LOS ANGELES

Roy "Esperan-Test," printer by profession, recently invited the LA Leaguers to an "Open House" at his home for an extra, "off the record" meeting of the local SFL. He exhibited his collection of stf., which includes early issues of WONDER, the one and only Annual, a file of Fantasy, etc.

Later in the evening guests adjourned for a short time to his front porch, where Jupiter was observed through Roy's telescope. On June 25th, there was the largest local turnout to date, to greet guest of honor, Charles D. Hornig, formerly Assistant Secretary of the entire League. Introduced by Executive Director Ackerman, he was heartily welcomed by all. During the evening, he obliged with an informal account of various Chapters of the League he has visited in his trips around the country, and of League activities in general.

He expressed himself as highly surprised and pleased at the progress of the LA group. Myrtle R. Gray, active Esperantist and ardent science fiction fan, was also Mr. Ackerman's guest, along with her young stf.-devouring son, and nephew, and husband. Mr. Ackerman exhibited an exciting new selection of special stills from London on Wells' wonder film, "Things to Come"; also, a Soviet science fiction magazine titled (translating from Esperanto) "Around the World."

Author-member Bob Olsen was present, and also obliged with an extemporaneous talk—about the Society of the Ants; the remarkable intelligence of these insects, their accomplishments, their civilization, etc.

"An ant has never yet built an automobile or aeroplane," he said, "but one naturally must not imagine too close an analogy between man and ant." Among other amazing facts, he informed that ants use a tool, and have domesticated approximately five times as many insects as man has animals! Considering its pinpoint proportions, the brain of an ant must be the most marvelous mechanism on earth! Needless to report, an exceptionally interesting and instructive evening was enjoyed by all.

On July 9th, the LA League again had the honor of Mr. Hornig's attendance. Also, the President of the World Girdlers' International Science League Correspondence Club was present with a second party. Some discussion was held of the astronomovie, "Solar Mystery," which was currently screening, and the recent preview of A. Merritt's fantascience film, "The Devil-Doll," in which Julie Mooney, sister of artist-member Jim Mooney, has a small part.

Jim exhibited his latest pencil pictures, ink illustrations, and color creations, concerning fantascience subjects. Mr. Ackerman passed around a publication from Holland having scenes of "Things to Come" and an Esperanto section. Messrs. Hornig, Test, Mooney, and Ackerman exchanged occasional comments in the Universalanguage.

LA readers of TWS are urged to attend the local SFL Chapter, which convenes every other Thursday evening from 7 o'clock on in the reserved "Tamarack Room" of the Clifton Cafeteria, 648 S. Broadway. Dates of meetings during August and September: August 6, 20; September 3, 17. And first evening in October.

YOUR FAVORITE AUTHORS

Arthur K. Barnes — J. Harvey Haggard

Dr. Arch Carr — Richard Tooker — Paul Ernst

Edmond Hamilton — Eando Binder

Ray Cummings—and many others

In Coming Issues of THRILLING WONDER STORIES

THE STORY BEHIND THE STORY

THERE'S a fundamental backbone of scientific logic in every good science fiction story. Give a pseudo-scientific writer the merest germ of an idea—based on known science of today—and, presto, he's at the typewriter! Now that you've read JOHN W. CAMPBELL, Jr.'s, interplanetary novelette, BRAIN STEALERS OF MARS, we know that you'll be interested to learn how the plot was evolved. Here's what the author says about it:

BRAIN STEALERS OF MARS rose out of an argument with a friend of mine, a research organic chemist. We were discussing the lowest life-forms, those single-cell creatures that are almost impossible to classify as plant or animal, save by their chemical reactions.

I suggested, in connection with the basic unity of protoplasm, the life-stuff of all cells, that it was quite possible that they could change their nature at will, being plant or animal, as conditions made advisable.

The unpleasant results of an intelligent creature capable of altering its protoplasm to suit appeared at once, and the effect such a creature would have upon society. Like most stories, it built itself from the basic premise: a creature composed of simple protoplasm capable of altering that protoplasm at will to any form. It would obviously destroy any civilization it came in contact with; so for story development a civilization was provided, destroyed from a higher point. The locale was fixed on any of the three habitable planets of the system by the condition of life, but Earth was ruled out because it hasn't happened here—yet. I picked Mars as an older, more probably advanced world, stretching Martian facts slightly as to atmosphere, etc., for easy presentation, and concentration on the main theme.

The introductory idea of the men driven from Earth, first wanderers in space, by the development of atomic power, was partly to suggest another idea: that the first atomic power experiments might be oversuccessful.

The sneeze-solution, by the way, is quite legitimate; it does require several hundred muscles for even this simple act, and the neuro-muscular coordination needed would be beyond the ability of any imitation that had not had an opportunity for prolonged study.

That the highly intelligent Martians could not detect the imitators is quite allowable in that the creatures had the opportunity to study at Martian colleges and learn all the Martians knew about Martian physiology.

Certainly, an intelligent creature capable of altering its protoplasm would be exceedingly dangerous!

CITY OF THE FUTURE

ARTHUR L. ZAGAT'S novelette, THE LANSON SCREEN, carries a grim theme. But it's not a remote one, at least not in the eyes of the author. He tells us:

It was on a viaduct that carries Riverside Drive over the Manhattanville Hollow that I conceived THE LANSON SCREEN. I had gone there for inspiration. I wanted to envisage the New York of the future; soaring aerial highways of which this one was the forerunner; the Hudson covered over, perhaps, with a green pleasure park, or with the multiplex, windowless building of Time to Come. The sky darkened by aircraft, myriad darting shapes shimmering rainbowlike in a translucent air. All the marvels yet in the womb of the Ages. . . .

Perhaps, I thought, there would be a great crystal dome over Manhattan Island some day, letting the sun

(Continued on Page 118)

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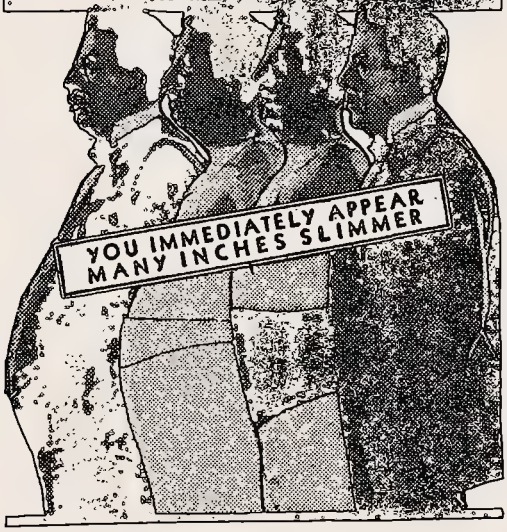

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(Continued from page 117)

through, and the life-giving rays of the invisible spectrum, but barring out rain, and storm, and dust. . . .

A crash from below caught my attention. A milk train was being coupled up—on another track was a string of refrigerator cars, bringing meats, and fruits, and vegetables to the swarming denizens of the city. . . . In the distance I saw the high tower of the old Croton aqueduct, at Highbridge.

How dependent, I suddenly realized, for every essential of life on the land beyond it were the million or more beings in the teeming island stretching far to the south of me. Cut them off from access for a day, a week, and they would die—like flies. Cut them off—cut them—

The vision of the dome overarching Manhattan stayed with me. But now it was a shell of impenetrable force covering the Island, permeating deep into the rocky entrails. The city's millions were caught within it, like so many rats. . . .

But they were people. Human beings with all the hopes, and aspirations, and follies, the braveries and the cowardices; the loves and the hates; that make them real, and lovable. . . .

The story THE LANSON SCREEN was born!

S. G. W's LAST STORY

THE BRINK OF INFINITY, the last story STANLEY G. WEINBAUM ever wrote, was not composed with publication in mind. Here's the origin of this yarn, as related by Mrs. Weinbaum:

Stan and I were sitting in our car one day waiting for a friend to join us. We were whiling away the time playing "Twenty Questions." You know, it's that game where you think of something, animal, vegetable or mineral, etc., and the other person has to guess what you have in mind. Everybody's played it at one time or another.

I was thinking of the foot that made the original "footprints of time"—and Stan guessed it in his quota of questions.

To come back at me, he asked me if I could guess a certain mathematical expression he had in mind—same rules. I couldn't guess it, and the idea amused him so much that he wrote it up in story form for me.

I got a kick out of seeing the idea worked out in fiction form and, although Stan had never thought of submitting THE BRINK OF INFINITY anywhere, I sent it to the editor of THRILLING WONDER STORIES when he asked me for something unpublished by Stan for his magazine. I hope everyone likes it as much as we did.

OTHER WORLDS

The cover for this month illustrates EDMOND HAMILTON'S novelette of space colonization, MUTINY ON EUROPA. Here's what Mr. Hamilton has to say regarding the development of his story:

MUTINY ON EUROPA is an attempt to depict in a story the terrific hardships and obstacles that will be faced by Earthmen who colonize other planets. I have often thought that science fiction has made too light of the terrible difficulties such colonial expeditions will encounter, the different gravitation with its effects on the cerebellum necessarily different from our own, and above all the terrible isolation from the parent world.

Few interplanetary stories, in fact, have emphasized sufficiently that isolation. Only consider the horrible loneliness and nostalgia experienced by such men as polar explorers, the rasp of temperaments and brooding over grudges to which it gives rise. Then think of the distance millions of times multiplied, the Earth a mere speck of light in the heavens, the sense of being forgotten by the people of Earth, that will inevitably be experienced by interplanetary colonists.

It may seem hackneyed to some that in it, the colonizing Earthmen are at warfare with the aborigines of the new planet. I can hear some readers asking—why could not men of Earth meet creatures of another world without fighting? But I feel that the profound differences in body and mind and thought-patterns between two races of different worlds would be an almost impossible obstacle to peaceful contact. Just remember that on our own planet, alien races of the same species have waged violent war on each other from thousands of years ago to this day. In view of that, does it seem likely that man could meet peacefully with creatures of a totally different species? That's my view—but whether or not all the readers agree with me, I hope they enjoy the story.

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SCIENTIFILM REVIEW

THE DEVIL DOLL. An MGM picture. Directed by Tod Browning. Starring Lionel Barrymore. Based on the A. Merritt novel, "Burn, Witch, Burn!"

BACK in 1929 Abraham Merritt's "Seven Footprints to Satan" was filmed disastrously. The picture was a financial success, but a sad disappointment to fantasy fans. MGM's "The Devil Doll," based on Merritt's "Burn, Witch, Burn!" is an equal disappointment. Guy Endore, Garrett Fort, and Tod Browning have combined to turn out a run-of-the-mill thriller which does not attempt to recapture the unique fantasy of Merritt's novel.

Readers will remember that the book revolved around Mme. Mandilip, the hideous doll-maker, whose command of unearthly science enabled her to terrorize New York with miniature human beings, obedient to her will. In the film Mme. Mandilip is played by Lionel Barrymore in an untidy wig and spectacles. There is little point in recapitulating the story, which is not Merritt's, and which is by no means novel.

There are a few good shots of the animated dolls; although these are merely further developments of the homunculus scenes in "The Bride of Frankenstein." And there is an excellent sequence halfway through the picture when Mme. Mandilip sends a girl-doll on a murderous errand. Her cautious adventure through a room filled with gigantic furniture is the closest approach to the Merritt atmosphere in the entire picture. Nevertheless the acting is not good, although Arthur Hohl and Lionel Barrymore do what they can.

Dear to the heart of the fantasy fan was the climax of "Burn, Witch, Burn!" the last desperate conflict against the super-science of the doll-maker. In the picture Mme. Mandilip's assistant throws a container of explosive at her confederate and destroys the doll shop in a strikingly unexciting manner. Best shot: the Apache doll cowering beneath a chair, waiting to stab the villain's ankle with a poisoned, microscopic dagger.

If you don't mind sitting through a dull picture for the sake of a few excellent fantastic sequences, you can safely see "The Devil Doll." But let's hope Hollywood never films Merritt's "Moon Pool!"—H.K.

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I'll swap one microscope set complete, including 75 power to 500 power microscope, set of slides, necessary slide making implements and subjects for a telescope. J. Ray Diefenderfer, 420 W. Market St., Orwigsburg, Penna.

Have three hundred stamps, drafting set, and would like tattooing outfit, powerful field glasses, or what have you? Henry L. Reil, 231 8th Street, Jersey City, N. J.

Please send me a telescope or microscope. Write me for list. Lawrence Larkey, Maces Spring, Virginia.

Have watches, old coins, post marks, etc., and would like Indian relics, violins, and other things. B. C. Campbell, 500 W. Lincoln St., Tullahoma, Tennessee.

I'd like your stamp mixtures, and please send your want list and stamps. Edward Labadie, 4522 S. Salina, Syracuse, New York.

I'll swap a 60X telescope, crystal set, pocket radio, for good guitar and course. Swap Indian relics, stamps and other things for something of practical value. Lamar Wray, Route 1, Box 6, Kilmichael, Miss.

I'd like a small A.C.-D.C. short wave radio—also have two type thirty-seven radio tubes and two type seventy-six as well—will swap for any one type twelve-A-seven. A. L. Beeman, 200 Friel Street, Ottawa, Ontario, Canada.

Have 80X microscope, four model rocketships that I'll exchange for almost anything that you can name. Eugene Hubbard, Dewyrose, Georgia (R. F. D. No. 1).

Exchange all kinds of photographs, oddities, freaks, scenery; no art stuff. These must be unpublished, and have hundreds of similar photos to trade for them. Paul Hadley, Piggott, Arkansas.

SCIENTIBOOK REVIEW

THE REVOLUTION IN PHYSICS. By Ernst Zimmer; translated from the German by H. Stafford Hatfield. Harcourt, Brace and Co., N. Y., 1936, at $3.75.

AT the rate with which Physical Theory changes nowadays, Ernst Zimmer's book may be out of date by this time, but it is well worth the reading, for it gives a not-too-technical, yet faithful picture of the modern concept of (primarily) the ever mysterious atom.

Starting with Newton's Mechanics, and running through the theories of Maxwell, Planck, Rutherford, Bohr and Einstein, it brings you finally, breathless and not a little bewildered, to the modern (i. e. early 1936) concept of the big little atom. The author points out how each successive building block by these great men has a little flaw in it that threatens to topple at any moment our picture of the atom and its larger image—the universe.

Many significant things are brought out. That light can be proved a wave or a particle separately, and yet must be both, for which the modern explanation is a rather lame concept of a "wavicle"—something that behaves *both* as a wave and particle. That the Principle of Indeterminacy strongly indicates that the electron is more of a *spherical* pulsation than a material body. That there is a series of Universal Constants (such as Planck's, Einstein's, etc.) which must all add up to some blinding truth, but which at present escape the keenest minds in science. That, finally, the whole set of laws applying to the everyday physical world cannot be extended to atomic physics without drastic revision.

As a philosophical epilogue, the author hints that some of the laws of physics apply directly to psychology. For instance, the inability to predict even the next second's future action from a survey of cause and effect. And the paradox of examining our minds *with* our minds, comparable to trying to see an electron with the same ray (photon) of light that knocks that electron out of range.

The onward march of physics is like climbing a mountain—the higher one goes the more one sees left to explore.—E. B.

GUIDE TO SCIENCE KNOWLEDGE ANSWERS

(See Page 109)

1—Page 15 in BRAIN STEALERS OF MARS
2—Page 22 in BRAIN STEALERS OF MARS
3—Page 27 in BRAIN STEALERS OF MARS
4—Page 63 in BRINK OF INFINITY
5—Page 46 in THE LANSON SCREEN
6—Page 82 in SATURN'S RINGMASTER
7—Page 41 in STATIC
8—Page 30 in TRAPPED IN ETERNITY
9—Page 31 in TRAPPED IN ETERNITY

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"A HAT OUT OF THE RABBIT"

Science Fiction! Of thee I sing. War, pestilence, depression—and unemployment. But science fiction is here to stay, as the blacksmith remarked of the automobile industry. For entertainment we have the talkies, bridge, ping-pong—but give me science fiction; the entertainment as intriguing as chess, and as modern as tomorrow. And inducing the man in the street to look forward.

You pull a rabbit out of a hat, and the crowd sighs with boredom. Ah; but now pull a hat out of the rabbit— The new THRILLING WONDER STORIES reconcentrates attention of the masses. WONDER again rises to the majestic heights. Not upon the apex of the pinnacle, but give us more like the first issue and it won't be long.

The newspapers run streamer headlines in which prominent names stand out like sore thumbs. Everybody buys. Look at the line-up on the contents page of the new T. W. S.! And the line-up for the next issue! Extra! Extra!

Our old friend, Ray Cummings, is back. Hope he'll be a permanent fixture along with Arthur J. Burks. A. MERRITT! Persuade him to do a serial for us. Keep up the standard set by the Aug. issue and we're with you, heart and soul. Go monthly and we're stronger than that.—*Joseph Hatch, 334 Maiden Lane, Lawrence, Kansas.*

SECOND BETTER THAN FIRST

I've just this minute finished reading the October T. W. S. I waited until the second issue came out so that I could judge my comments more fairly. I'd say that "Cosmic Quest," by Hamilton, "Rhythm of the Spheres," by A. Merritt, and Farley's "Liquid Life" were the best. In this issue you seem to have found yourself and have produced a better magazine than the first one.

Why does Hal K. Wells always begin the names of alien races with "X"? . . . By all means keep the new "Story Behind the Story" feature in the magazine. It adds to the enjoyment one derives from science fiction, for it shows us how these authors work. . . "Scientifacts" is good, too, but don't take out a short story you might have on hand to substitute in its stead. "Liquid Life" is by far the best thing Farley has ever produced. "Zarnak" is a nice bit of variety. Ray Cummings' "Blood of the Moon" was a pretty hackneyed job, but his "Shadow Gold" in the October issue is interesting and more up-to-date. Again, the ancient voice that palls much upon ye Editor's ear, "Monthly, plizz!"—*Douglas Blakely, Sec'y Science Fantasy Correspondence Club, 4615 Edina Blvd., Minneapolis, Minn.*

SUGGESTIONS

After perusing two issues of your new magazine from cover to cover, I feel called upon to make a few comments. You have a set-up that augurs well for the future of science fiction. You have a fine set of authors—but don't depend upon authors alone. The story is the important thing.

Cummings, Merritt, Binder and Kline are top-notch writers. But their contributions in the first issue had the atmosphere of "formula." Weinbaum struck the only note of originality. The October issue shows definite improvement. Merritt is much better here, and his unique story takes first place. Farley is second with his fascinating original "Liquid Life." "The Microscopic Giants" is third, containing some good ideas. Once again, Cummings is disappointing, and I could hardly wade through his story. Burks does a good piece of writing without much to work with, and Wells has a new idea or two in his yarn.

Let originality be your theme. Let's have more fantasy and less saving of the world from invaders. Let's have stories of great inventions used for good, of interplanetary exploration without warfare, of human men and women and their lives in the distant future. Your next issue looks good. I hope you will steadily improve after the fine beginning you have made. My best wishes for the success of T. W. S.—*Donald V. Allgeir, 707 Madison St., Springfield, Mo.*

AMATEUR ASTRONOMERS, ATTENTION!

When I wrote a letter to your magazine in April, asking for students of astronomy to get in touch with me, I hardly expected the overwhelming flood of letters from all parts of the country.

Each letter (112 of them!) told how T. W. S. had acted as an extraordinary cure for tired—but imaginative—minds. Some told me that the magazine in its new form was much better than its predecessor. Others claimed that the first part of the book they turned to—after obtaining a copy—was the Science Questions and Answers Department.

Many of the readers wanted information as to how reflecting telescopes could be built. I was placed in a position where I wanted to answer each letter, but was unable to. Therefore, with your kind permission, and the permission of the readers, I suggest that I write a series of articles on reflecting telescopes and their construction, as a contribution toward popularizing astronomy. These articles will explain, in simple and untechnical terms, the making of telescopes.

Your suggestion that light might possess different wave-lengths under various media was found plausible. I wrote to a professor at Harvard University and his answer was: "It might be possible that 'death rays' might be seen in various colors. For instance, if a beam of invisible light of about 0.0001 mm. passed through a media in space congested with cosmic dust, the ray would be visible. But still, there would be no color. The wave-length depends upon the atoms discharging it; and not the atoms upon the sensation."—*Joseph Mallory, 503 West 146th St., New York City, N. Y.*

(What do our readers think about a series of non-fiction articles, as suggested by Mr. Mallory? Space in T. W. S. is limited, and we would not like to deprive T. W. S. readers of their fiction content. Will readers write in and give us their opinions?—Ed.)

FARLEY TOPS AGAIN

Once more THRILLING WONDER STORIES comes through in good style. Although most of the stories were only average, two of them stand out as being excellent. The first, "Liquid Life," by Ralph Milne Farley, is one of the best yarns I have ever read. The other is "Rhythm of the Spheres," by A. Merritt.

Your artist evidently doesn't bother with details. The monster on the cover is described as being 12 feet in length. On the cover it is about 24 feet long, in proportion to the man. It is also supposed to be red in color with purple eyes. But outside of that it was a very good cover.—*Robert A. Madle, 333 E. Belgrade St., Philadelphia, Penna.*

FOR AMATEUR S-F WRITERS!

I have some good news for every reader of T. W. S. This news is that there is a

(Continued on Page 124)

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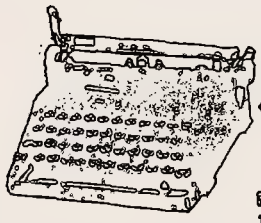

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(Continued from page 123)

new science-fiction fan magazine, the Science-Fantasy Correspondent. The purpose of this non-profit magazine is to encourage readers of imaginative fiction to write similar fiction, and see their work in print. Much talent in this field has been undiscovered because amateur writers have been afraid that professional magazines would not accept their work. These writers can turn to the Correspondent, for any story with a reasonable amount of merit will be accepted for publication.

However, I assure you that there will be no gong-getters. Nonprofessionals will not be the only contributors. Material by Dr. David H. Keller is in the first issue, and Forrest J. Ackerman is slated for the next. In addition, lots of fan news and articles of interest to followers of science fiction.—*Willis Conover, Jr., Editor, Science-Fantasy Correspondent, 27 High St., Cambridge, Maryland.*

HOW'S CAMPBELL?

Here's my opinion of the October issue. The cover good, but inaccurate. Better than the August cover. Now that we've had two "monstrosity" covers, keep away from this type for a few issues. Your cover artist, whoever he is, even though his first covers are only fair, has what it needs to produce some really good work.

"Shadow Gold" and "Liquid Life" are the best stories. "Rhythm of the Spheres" was a typical Merritt yarn, improbable, but fascinating. Much better than "The Drone Man." "Dictator of the Atoms" didn't live up to expectations, but was o. k. "Cosmic Quest" and "Man-Jewels for Xothar" were both good. Though several of the items in "Scientifacts" were old, on the whole it was interesting. The new feature, "Story Behind the Story," is very interesting.

As a whole, this issue is better than the first one. The line-up for the next issue looks good, except for "Mutiny on Europa" and maybe "Brain-Stealers of Mars." Campbell is one of my favorite authors, but from the forecast this latter story sounds as if it will be minus the usual Campbell science.

Now for requests; enlarge the League and the Readers' Department; have more scientific fact and theory, though not so much as to read like a text book. And please go monthly.—*Paul H. Spencer, 88 Ardmore Road, West Hartford, Conn.*

KNOCK-KNOCK!

Since you asked so prettily in the heading for The Reader Speaks column, am shipping my opinions C. O. D. and no quarter asked. A little late, I suppose, but here comes a bombardment anent the August issue and a few cursory remarks upon glancing over the newly-arriven October number.

(Continued on Page 126)

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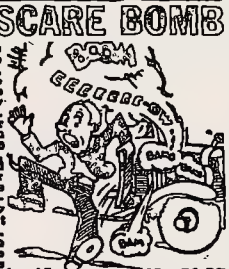

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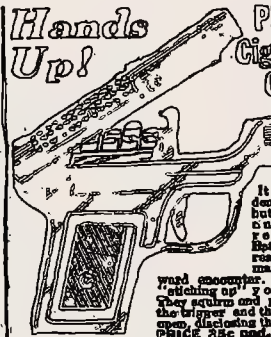

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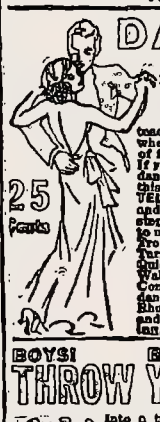

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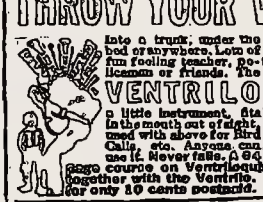

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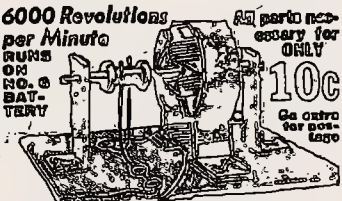

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LATEST CATALOG

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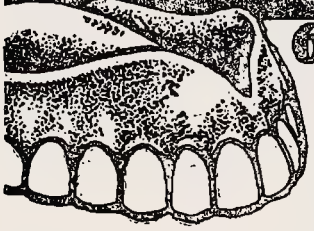

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in

DEATH RIDES THE BLIZZARD

A Full Book Length Novel

in the November Issue of

THE PHANTOM DETECTIVE

10c AT ALL STANDS

(Continued from Page 124)

The August number. Cover: vile. As a jacket for "The Rover Boys Down East River" it might pass on a dark night with a push, but a big push would be necessary. The scene chosen wasn't so bad, but the drawing was.

Contents page: Very good layout, and a general neat, pleasing effect. Am glad to see the next issue's events announced here again.

Illustrations: Bravo! Marchioni was always good, and you seem to have found some way of making him even better. The illustrations are well-chosen, well drawn, and neatly blocked off. And I note with joy that you have not neglected the little matter of captions.

Zarnak: Must we go on? I can't express a true opinion without referring to censorable epithets. With a good artist and story a continued strip would be a nice idea, but this—words fail me!

Departments: Forecast on last page. This is okay. Ballyhoo, of course, but it made me a little interested and found me looking forward to the next issue. Reader Speaks: Not bad for the first one; we want it enlarged, of course, and pray you will continue to answer the points brought up.

Stories: Looking at it from your angle, rather than from the point of view of the old WONDER, they are not bad. Ray Cummings has an enjoyable style and technique. Science-fictionally speaking, "Blood of the Moon," was enjoyed. Of course, Cummings has his little foibles—his heroines are always as pure as little Nell, and the heroes as simple as Simple Simon. Perhaps after awhile you can get something new by him—say one of his excellent four-part serials; Cummings can write new things if he wants to, and when he's at his best we can forgive a slightly hackneyed plot and the never-different characters. Weinbaum's "Circle of Zero" was the high spot of the issue, though, and worth the price in itself. What shall we do without Weinbaum?

A few impressions of October issue: Cover much better. Since they're going to be sensational, let's have them really thrilling, fantastic, and well drawn. This one is all of that. Illustrations are splendid; orchids for the new departments—"Scientifacts," "Story Behind Story," and new swap column. Hope you can go monthly soon and that you will be able to run serials.

I would like to volunteer as a potential Director or a possible S. F. L. Chapter here in Canaan. Would WONDER readers in the vicinity be good enough to let me hear from them?—*Robert W. Lowndes, Box 384, Canaan, Conn.*

FAVORITES

Being a veteran reader of WONDER I naturally bought a copy when I caught sight of your new and attractive masthead.

Your cover artist gets the book off to a good start. His work has a popular appeal that Paul's lacked, although I myself was rather fond of it.

Marchioni has done some really good work for you. "Zarnak" is a good feature.

Your list of names should be attractive to any science fiction reader. It's a real galaxy of science fiction stars. Cummings, Kline, Merritt and Binder are headliners any day. Some of the foregoing you have almost "brought back from the dead," since it was some time since I have seen their names on any contents page. Some other old-timers that I should like to see back in print are Breuer, Harris, Cloukey, Meek, Verrill and Wertenbaker. I'm glad to see that you've put back the "author of . . . etc.," line. In all, you have a pretty fine magazine. I hope you can go monthly soon.—*A. B. Gnaedinger, 95 Pierrepont St., Brooklyn, N. Y.*

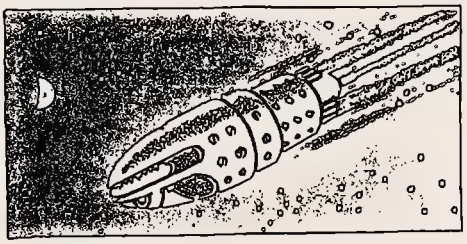
WE'RE O. K. WITH HIM

Well, you asked for it. All through the August issue you beg for suggestions, brickbats and affirmations of approval of the change of policy of WONDER.

Hats off to the most progressive magazine in the field. You have good, clear illustrations, larger and darker print on a better grade of paper, and a host of new features that fans have been clamoring for

(Concluded on Page 128)

UNIVERSAL DESTRUCTION!



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29x5.00-19	2.95	1.05
30x5.00-20	2.85	1.05
5.25-17	2.90	1.15
28x5.25-19	2.90	1.15
29x5.25-19	2.95	1.15
30x5.25-20	2.95	1.15
31x5.25-21	3.25	1.15
5.50-17	3.35	1.15
28x5.50-18	3.35	1.15
29x5.50-19	3.35	1.15
6.00-17	3.40	1.15
30x6.00-18	3.40	1.15
31x6.00-19	3.40	1.15
32x6.00-20	3.45	1.25
33x6.00-21	3.65	1.25
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32x4	2.95	.85	30x5	3.45	1.35
33x4	2.95	.85	32x5	3.75	1.45
34x4	3.25	.85	33x5	3.75	1.45
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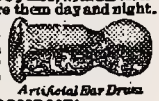

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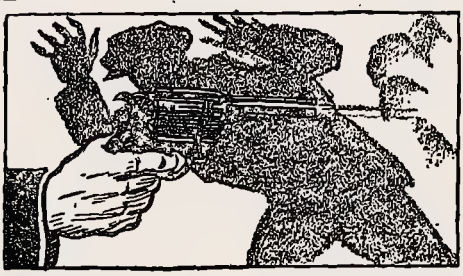

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G-MEN
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(Concluded from Page 127)

for years. The cover is well drawn, the table of contents is improved in appearance, and the price is popular.

The features are crackerjacks; science fiction strip, questions and answers, quiz on science content, film review, s. f League, Readers' column, FREE swap department, and the forecast of next issue.

The improvements are wonderful. Now I am going to talk about what you know and I know the majority of the readers want. Your first issue is energetic and revolutionary, and I know that you can give them to us. A book review section of science and s-f books, science fillers of news of interest to s-f fans, smooth edges, biographies and pictures of authors, report of vote on the stories by readers, which most popular, etc.

Now for the stories in the August issue. At last a science fiction mag which gets the authors we want with no ifs, ands, or buts. Cummings, Merritt and Kline! And the rest of the line-up is very good too, "Blood of the Moon," "Drone Man" and "Revenge of the Robot" appealing to me particularly. I know that you will soon be at the top if you retain your progressive and forceful policy.—*Allen B. Brown, Box 307, Trinity, Texas.*

WANTS SPACE STORIES

Acting upon your suggestion, I purchased a copy of your new magazine and read it, advertisements and all, and wish to go on record as saying that I like it very much indeed. The stories were all good. Of them I liked "Blood of the Moon" and "Land Where Time Stood Still" best. They were unusual and highly entertaining.

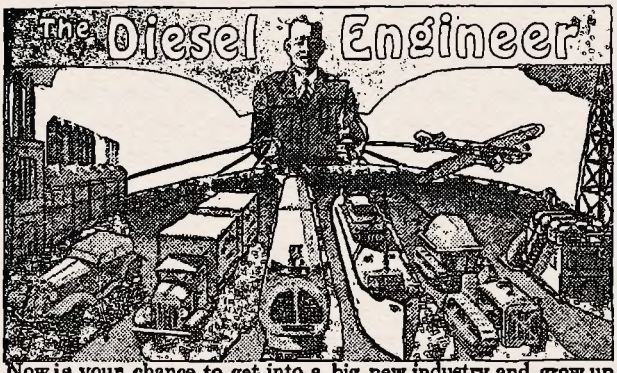
I am one of those individuals to whom a certain type of story appeals most, to the exclusion, or at least indifference, of all others. My "pet" is all material, stories and articles concerning the stars, the planets, inter-space travel, and the various stars, galaxies, theories and astronomical data concerning them. There is such an endless supply of material to choose from in that field, whether is be based on Earth, or upon some invisible satellite, or even on a star not discovered yet.

I am a great reader of astronomical books, and like Jeans very much, pessimistic though the books from his pen are. Also have read Flammarion and other astronomers and their works.

Anyone else interested in the same topic may write and we can do some arguing on various themes, although I am not an expert along such lines. We can always learn, you know.

I've taken up quite a lot of your time, Mr. Editor. We're square, for you and your magazine have taken up many hours of mine! So let us drink a toast to T. W. S.—may she grow and prosper as is her due, absolutely and positively.—*Merle R. Huntley, 3684 Menlo, San Diego, Calif.*

The Diesel Engineer



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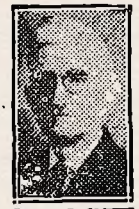
Prostate Sufferers



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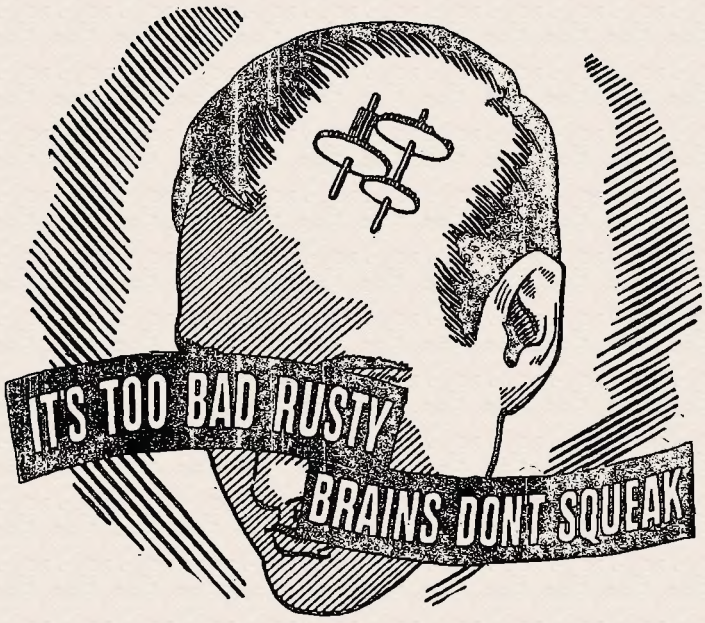

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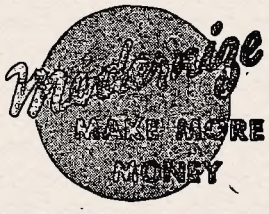

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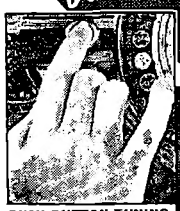

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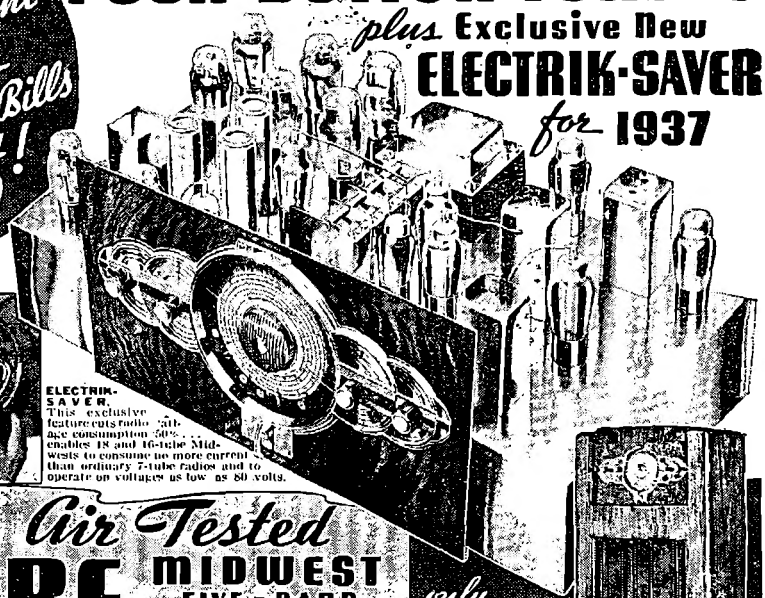

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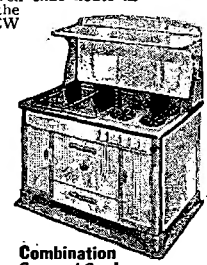

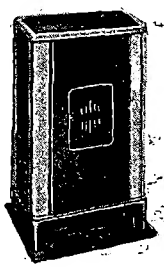

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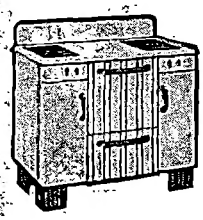

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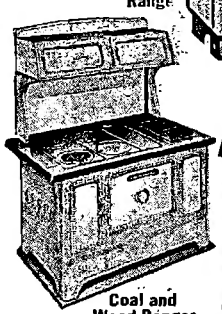

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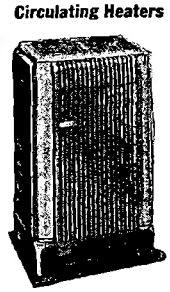

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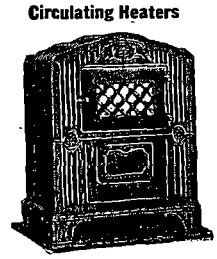

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